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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2057

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INTERNATIONAL AFFAIRS

CEMA NATIONS UNDERTAKING OIL EXPLORATION IN BALTIC SEA

Bonn DIE WELT in German 19 Aug 80 p 10

[Article by Harald Steinert, Kiel: "Petroleum--USSR, Poland and GDR Starting Exploration in Mid-Baltic Sea, However: Chances Are Good Only For Small Finds"]

[Text] In the Western Baltic plans for the first off-shore oil production in the Kieler Bucht are taking shape. In the area of the Eastern bloc countries in the mid-Baltic exploration is also beginning through the off-shore consortium Petrobaltic, of which the USSR, Poland and the GDR are members. A platform, which will operate out of Danzig for the time being, will carry out the first drilling operations--where was not known. The installation can drill in up to 90 meters of water and should be able to operate in almost the entire Baltic area.

The chances of finding oil in the area of the Eastern bloc exploration are extremely good--which is not to say that these discoveries will be profitable according to Western standards. In these countries, with their centrally controlled economies, exploration costs without great economic success can be justified by overriding criteria. Consequently, one can calculate "with a probability bordering on certainty" that some time in the next few years Petrobaltic's activity will give rise to an off-shore area, even if this is based on only very small deposits of oil.

The geological situation suggests clearly that the chain of small oil fields which were opened up during the postwar period, principally on the coast of the Soviet province of Kaliningrad (formerly northern East Prussia), in the Memel area and in Lithuania and Latvia, extends into the Baltic. Poland and the GDR have also tapped apparently only modest oil deposits on the Baltic coast, the location and formational type of which offer further opportunities. On the "opposite" side of the Baltic, several small deposits of oil from the island of Gotland are known from Sweden, which produce only tons of crude oil per day, but are said to be in production. The heart of the "south-Baltic off-shore area" is the present province of Kaliningrad, where there are at least 12 fields. The total usable reserves there are estimated at 20 million tons. That is not very much if it is kept in mind that the annual production of the USSR is already far above one-half billion tons. Almost all the fields in this region are on the water, near the water or in the Kaliningrad or Kurische Bucht. There is little information about current production. According to OIL AND GAS JOURNAL, the five most important fields together produce about 1.3 to 1.4 million tons from 80 wells. The oil is mostly of excellent quality, light in color, light in weight and low in sulfur. It is currently taken by rail to White Russia. A refinery in Lithuania will be in operationin the near future, supplied by pipeline from the Kaliningrad fields.

The chain of Baltic oilfields stretches to the northeast, far into Latvia. In Lithuania alone seven different deposits have already been discovered. To the southwest along the Baltic coast a few deposits of oil of probably even smaller capacity have come to light. The most important discovery is probably the Zarnowitz field near Leba (Eastern Pomerania), which is likewise directly on the coast. Two additional small fields on the island of Wollin are in production. On the GDR side one oilfield on the island of Usedom is known, which also seems to extend out to sea and could be developed into an off-shore field, as well as three fields in Western Pomerania.

The positive expectations for the exploration campaign now beginning are based not only on the existence of these occurrences but on the geological structure of the bedrock of the Baltic shelf and the distribution of the highest-yielding formation, the Cambrian: 17 or 22 of the deposits opened up on the Baltic coast of the East bloc countries alone are are located in it. The oldest of all geological formations that can be oil-bearing--about 600 million years old--it is widespread in the bedrock of the central and eastern Baltic--as has been known for a long time.

The formation lies at a relatively shallow depth and is accessible with moderate effort (to judge by the drillings about which details were made known, it is found at a depth of about 1,000 to 2,500 meters). It shows no signs of subsequent folding through the formation of mountains. This means that from the occurrences discovered on land one can deduce with a high degree of certainty a broad extension of this formation under the adjacent Baltic Sea.

However, it would be astonishing if the off-shore drillings of the Petrobaltic consorium did not open up additional deposits in the Cambrian strata under the many tens of thousands of square kilometers of the high-yield Baltic Sea region, in addition to the seward continuations of the Lithuanian coastal fields and the Usedom field. But it would be almost as astonishing if this exploration turned up more than small or medium-sized deposits.

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FAMILY CONTRACT--NEW FORM OF ECONOMIC REFORM SUGGESTED

Sofia NOVO VREME in Bulgarian No 8 Aug 80 pp 26-39

[Article by Ivan Mironov: "Labor Behavior and Its Control"; **passages enclosed in slantlines printed in boldface**]

[Text] The problems of labor control have a permanent theoretical and practical significance, for the development of society depends, above all, on labor activities. The gravity of such matters becomes particularly great when it becomes necessary to review methods of control and control decisions with a view to the elimination of one or another shortcoming in the organization of the work in individual production areas and sectors.

A tremendous amount of practical work is being done in our country to improve labor management and organization by making changes in the principles and mechanisms through which labor behavior is affected. Their purpose is to develop the necessary atmosphere for the most effective possible manifestation of the work capabilities of the people and for high economic and social effectiveness of public labor. A number of problems arise in this connection considered of essential significance in improving labor behavior control. The present article will be discussing some of them.

Need for Systematic and Profound Study of Labor Behavior

Labor behavior is determined by a number of factors. Each factor has its importance in combination with all others and, above all, with the basic factors operating in the corresponding area. Their influence is exercised indirectly as a result of their reciprocal combination and the ways in which they are accepted by the working people. This circumstance gives labor behavior a strong sociological content. Hence the need to study labor behavior through sociological interrelationships among needs, motives, incentives, and satisfaction from labor, weighing economic, social, labor-law, and administrative actions in accordance with the requirements and possible reactions on the part of those on whom they will be applied. This insures the greatest possible combination between social objectives and private interests.

Awareness of the motivations which govern aspirations and manifestations in education, vocational training, choice of a profession, type of work and place of work are the most necessary factors in choosing the means for influencing labor behavior and controlling various activities. In such choices we must be familiar with the readiness on the part of the working people to compromise in the implementation of their various aspirations. The latter are always placed in a specific order. For this reason, inevitably the tendency appears to "sacrifice" those closer to the bottom of the scale for the sake of implementing more essential objectives. Thus, for example, every person aspires to reach the possibly most acceptable working conditions: high wages, good production and living conditions, convenient shifts, normal physical and mental stress, advancement possibilities, respect of the labor collective, the group, and society related to the usefulness of his labor, and so on. At the same time, however, the characteristics of the various professions are quite different in terms of said indicators, as are the problems which the individuals must resolve. Therefore, a univeral satisfaction from the work may be achieved in exceptionally rare cases. As a rule, in certain living and working circumstances, the aspiration is to achieve an overall satisfaction which always contains a certain amount of dissatisfaction with one or another condition of the work. The essential feature from the viewpoint of society is for dissatisfaction to be of such a nature as to insure high readiness to work and corresponding labor activity. The social environment can influence this objective only when possibilities are present for converting dissatisfaction into a work motivating and stimulating factor.

The gradation of objectives in individual plants determines both the gradation of labor motivations as well as the satisfaction from the possibilities provided by the work for resolving the problems of the population and its individual groups, differentiated on the basis of the most essential characteristics of their labor behavior. The overall status of these indicators offers possibilities for a gradation of the means used for exerting an influence on the scale of the society. However, it is only the knowledge of the condition prevailing in the different groups that would make it possible for such means to be defined on a differentiated basis and yield factual results. The characteristics such as level and type of education, income, property, sex, function in the family, outlook, and so on, combined with objective living and working conditions through the various periods of social development, cannot fail to influence the significance ascribed to the various characteristics of the work. However subjective assessments of the attractiveness or nonattractiveness of a possible type of work may be, they possess a social significance merely because of the fact that, expressing a specific position, they control quite tangibly the work feeling and factual work behavior, thus substantially affecting the effectiveness of social labor and development. Whether agreeing or disagreeing with such assessments and with their factual influence, the individual institutions in charge of social management, whose decisions and actions are directly or indirectly related to the control of labor behavior, must objectively be forced to take them properly into consideration, for in the opposite case their control activities would be ineffective and the decisions themselves would be subjected to frequent changes. Society can resolve its problems in the interest of the entire population only by involving the individual interests in the work and applying a system of incentives consistent with the scope and gradation of labor motivations, providing that a state of harmony, closeness and unity exists among them.

The systematic and profound study of labor behavior could provide social control with the necessary information as to its condition and, on the basis of the conclusions of such studies, help to choose the direction and specific solutions for the elimination of shortcomings. These possibilities are based on its multiple-factor determination which give it the content of an integral indicator and, consequently, make it a source of exceptionally valuable information on sociological interaction in the training for and application of labor and their reflection on labor results.

Basic Factors in Influencing Labor Behavior

Like any other behavior, labor behavior is a means to react to specific circumstances. Its nature, in the final account, is determined by the influence which the circumstances and the various changes in circumstances have on achieving specific interests. Consequently, the factors which control labor behavior and may be used to influence it are socioeconomic, individual, and social-mental.

For understandable reasons socioeconomic factors have the strongest and broadest influence on labor behavior. They include the following:

1. Production and labor relations based on the nature of the ownership of productive capital and current labor legislation (the hiring and layoff system, amount of wages, social and pension matters, and others).

2. The specific labor situation, characterized by the level of employment, possibility to find and choose employment and place of work, degree of consistency between the necessary and the existing professional and skill structure of cadres on a social and regional scale, ratio among the different characteristics of the most essential indicators of individual activities, enterprises, professions, such as wages, working and living conditions, regimen of work and recreation, and possibilities for advancement in labor career and wage.

3. Living conditions related to the development of needs, the possibility to satisfy them from the viewpoint of the purchasing power and

the condition of the market, changes in living costs, shaped by the simultaneous influences of the development of nominal incomes, consumer prices, prices of durable commodities, taxes, pensions, social benefits, and so on.

There is a permanent link between socioeconomic and sociomental factors. They are reflected on labor behavior in accordance with their condition and the intensity and nature of changes. The factual labor behavior is shaped in the course of the active attitude of the working people toward objective living and working conditions. This is a willful act, the result of the analysis and synthesis of information regarding one's own needs and the possibility for their satisfaction through labor, as well as the objective circumstances. Any condition or more significant change in objective reality is assessed by the people comprehensively and triggers a certain feeling which is of importance in terms of their factual directly or indirectly labor-related actions.

Through their behavior at work and through labor results the working people at large influence control institutions which decide on matters related to the development of jobs, working and living conditions, wages, pensions, labor relations, pensions, and social matters, creating one or another type of condition for the use of the income and the satisfaction of needs. This interaction is manifested also within the individual enterprises. Its nature is not determined exclusively by factors under their control but also by factors which operate on a national and regional scale.

The individual institutions influence labor behavior through their decisions and actions. In the same way, through their production activities and their reflection on the development of society in the various labor areas, the working people influence the behavior of the individual institutions and enterprises. This interaction is constant and constantly creates the need for the individual parties to take into consideration possible reactions and their consequences in terms of the implementation of objectives.

The social practice of socialism, our own practice included, indicates that the public ownership of productive capital does not, by itself, create an identical attitude toward labor among all the people. There is labor and there is labor: There is labor under favorable working and living conditions, considered highly satisfactory because of its content and other indicators; there is also labor under adverse conditions, hard, unattractive and which, because of its nature, does not offer great possibilities for prosperity in the work and in terms of the social hierarchy. Some types of labor require high skills and even lesser and no more than basic responsibilities. At the same time, the conditions under which the people live and the problems they must resolve in accordance with their own plans may be quite different in nature. Also different are the possibilities of the individuals to perform various types of work and so are their inclinations.

Under such circumstances, it is objectively inevitable and legitimate for labor motivating factors to affect individuals differently. This also creates differences in the influencing power of individual incentives in resolving problems concerning the choice of a profession, job, and place of work, the shaping of an attitude toward individual types of work, labor activeness, and involvement with one's profession and enterprise.

Society and individual enterprises may experience an acute need for cadres possessing a specific type of training and practical qualities. As a rule, however, this requirement cannot lead individuals/mandatorily/ to train themselves for a corresponding type of work and find jobs where there is need for cadres. Even though the general status of employment conditions cannot be ignored in resolving problems of education, vocational guidance, and so on, for it is this condition that predetermines the possibility to find work and achieve said objectives,/in the course of their decisions and actions in the field of labor the population and the individuals are guided essentially by their personal interests. These interests are related to the needs which are the basis of labor motivations, while the decisions and actions themselves are the result of the inevitable conflict among different motivations/.

In some cases a given profession and job may be considered acceptable from the viewpoint of the nature and content of labor, working and living conditions, or advancement possibilities. At the same time, however, they may be less acceptable or, in general, unacceptable from the viewpoint of the wage level. In other cases, the size of the wages may be acceptable and even quite satisfactory while the other labor conditions may be unsatisfactory. A number of combinations of such characteristics are possible. Each one of them is assessed by the individual through a certain lens which, in this case, is a type of measuring device for the sacrifices made and the benefits extracted. Good production and living conditions, lower work stress, a favorable labor system, possibilities for growth in the hierarchy, and the high social prestige of a given profession or type of work may be considered by some strata as the "price" for lower wages, whereas higher wages may be considered the "price" of less favorable types of work, generally or in part. The multifactorial determination of the labor behavior demands of the factors determining it to be in a ratio which, put together, will provide the desired status of the various components in such a way as to insure the following: a) great industriousness; b) desire to develop labor capabilities; c) full availability of necessary cadres in various labor areas and sectors; d) high labor activeness; and e) strong interest in individual and collective results of labor activities.

We could definitely consider that said desired results may not be obtained unless the labor interests of the population become properly involved and organized in harmony with objective laws governing social development under socialism. In turn, such laws could operate and be implemented only through human activities. It is precisely in this connection that the knowledge of the individual importance of labor in the implementation of the individual plans of the population, the satisfaction or dissatisfaction with various types of labor activities, and the readiness for changes in labor behavior as a result of the application of one or another approach and of specific control decisions is of great theoretical and practical value.

Position of Labor in the Individual Plans of the Bulgarian Population

In recent years a number of studies of labor collectives and students and of broad population and working strata were conducted in our country.* A study has been made of the power of the factors influencing the orientation of the working people in selecting a type of education and profession, the significance ascribed to the various labor characteristics and applied labor incentives, the satisfaction from labor, job turnover, and others. The incentive for the intensification of such studies was provided by the effort to find more successful solutions in the respective areas as well as the direction of the research itself was substantiated in the decisions of the February 1974 BCP Central Committee Plenum on ideological work.

The results lead to some general conclusions regarding the overall system, gradation of labor motivations, and the power of the influence of various incentives and of the social environment. Since the information provided by the labor active population contains socially more significant and more reliable information on the factors which control labor behavior, the respective conclusions are based essentially on it.

/At present the aspirations and actions of the working people in the fields of education, vocational self-guidance, choice of profession and place of work, labor activity itself, assessment of labor accomplishments, and so on, are subordinate mainly to considerations of their reflection on the development of the family and the satisfaction of its current and long-term requirements). Due to the fact that the main factor which determines, to the greatest extent, the development of a prosperous family is labor, the problems in these areas will inevitably be resolved mainly from the viewpoint of the consequences to the family of the respective decisions and actions. These problems are not the target of independent solution by the individual but of the respective family.

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* The description that follows is based on studies conducted by the Institute of Sociology of the Bulgarian Academy of Sciences, the Institute for Scientific Studies of Young People, the G. Dimitrov Scientific Research Institute of Trade Union Problems, the Scientific Research Institute for Labor of the Elprom Industrial Enterprise in Troyan (1976), the comprehensive study of the labor collective in the Bulgarian People's Republic (1974), the study of manpower turnover (1972), the study of the labor collective of Blagoevgrad Okrug (1971), and the Vocational Orientation of Students and Other People, for 1972-1977.

It is precisely within the family that the most lively discussions take place and problems are resolved regarding the education of the children, the choice of profession, the place of work, cases in which changes in the type of work, place of work, or profession are necessary, and how to rate the various needs in accordance with their urgency and available family resources.

Under socialist conditions as well the Bulgarian family retains a number of typical characteristics developed in the course of the centuries-old history of the Bulgarian people. The family has an emphatically labor organization. The aspirations of the Bulgarian people have always been to give their children a type of education and vocational training suitable for their work, insuring the development of a prosperous family and characterizing them as good citizens. The socialist conditions introduced a number of changes in their lives, mainly in terms of ownership of productive capital, and the method for the distribution and formation of the family income. Indeed, no longer are funds for production accumulation withheld from such income. It is a fact, however, that most of the family's requirements, including the needs whose satisfaction requires considerable funds, such as housing, furnishing, and so on, are the target of the individual incomes of all family members. On the other hand, even though considerable successes have been achieved in improving living conditions in the course of the socialist development of the country, a number of prime needs are met, on an average, at a level below rational norms. At the same time, under the general influence of changes in living standards and in the cultural development of the population, and the development of production and scientific and technical progress, a number of new requirements have developed whose satisfaction has rapidly turned into a mass necessity. Under such circumstances, as a social organism, the family cannot fail to develop interests which would mold an exceptionally active attitude and play a strong role in resolving problems in the field of labor and in terms of the factors which determine the satisfaction of family needs. Efforts to free the family from its economic and labor function and just about treat it like a type of club under conditions in which its prime requirements are satisfied on the basis of the principle of distribution according to labor and its expansion and intensification, bearing also in mind the existing deeply rooted mental feeling, conflict with objective circumstances. Their implementation, even though on a limited scale, necessarily triggers adverse consequences in the field of labor activity.

/It is established that our population is most categorically expressing its belief that material prosperity is the main motive force for its work activities/. This logically stems from the already mentioned considerations concerning the needs satisfied by the population through its private incomes and the level reached in their satisfaction. The size of the income earned from the individual professions, enterprises, and types of labor activity has and will have an influence of first rate strength and scope on labor behavior. Under such circumstances, sectors, enterprises, and areas of activity which fall behind in terms of providing income for the working people cannot fail to and, as a rule, do experience difficulties in finding the necessary cadres. Skills which are underestimated in the setting and factual payment of wages are, all in all, underattractive and, in most cases, are experiencing a shortage of cadres as well as a higher potential and factual personnel turnover. At the same time, a substantial correlation between labor qualities (high skills, labor creativity, high productivity and high quality work) and the income earned encourages labor exploits and upgrades the attractiveness of such activities and professions. A number of examples may be cited from our own reality, proving this correlation on a social scale, used in the area of social control to influence labor behavior. However, there are also grounds to believe that the existing mental feeling in the labor area has been improperly taken into consideration, as a result of which the organization of the incentive has not been developed in accordance with the scope and gradation of labor motivations and of the significance ascribed by the population to material labor incentives. Reliance on more labor incentives and on administrative methods for controlling labor behavior has been excessive.

/The results of sociological studies convincingly prove that there are no reasons to believe that as the living standard rises the power of material incentives in basic labor manifestations will be declining/. Comparisons between the new and old wages of those who have changed jobs indicate, on a national scale, that the average wage level in the new job is about 20 percent higher than in the old. Readiness to change jobs for the sake of higher wages is quite high among all groups regardless of their level of income and property status. Indeed, willingness to change jobs declines as the income of a family member rises if a job change would bring no more than an insignificant wage increase. However, such readiness becomes substantially higher should the new job pay a higher wage.

The influence of the property status on the readiness to change jobs for the sake of higher wages is not so clearly manifested as that of the income level. In groups with the best property condition this tendency is substantially weaker compared with the other groups and the average status. However, in such groups readiness to change jobs for the sake of considerable wage increases is even higher. The not so clearly expressed correlation between material labor motivations and the property status, compared with the income level indicator, is entirely natural. Households with a good property status could have a great variety of incomes and those with high income may have very varying property levels. Hence the conclusion that /the working people are quite sensitive to the possibilities provided by their current income in the satisfaction of their prime daily requirements, for which reason their size and purchasing power have and will have a rather strong influence on their labor behavior/.

Even though in the gradation of labor motivations considerations as to the type of income will be provided by the individual professions or the work done in various areas, activities, and enterprises assume a central position, in the case of a number of strata and groups they are differently related to other essential characteristics such as, for example, working and living conditions, the usefulness to society, the interesting nature of the work, the possibilities for displaying labor abilities, the extent to which conditions for autonomous activities are insured, and so on. All in all, this is the average condition of the gradation of labor motivations and requirements which, put together, determines the level of satisfaction from the work. The significance ascribed to said conditions or characteristics of the work both in terms of averages and individual groups confirms a strong and increasing struggle waged by labor motivations. This is also confirmed by the sequence of the reasons for dissatisfaction among the working people. In 1977, for example, their significance could be rated as follows: a) wage; b) difficulty; c) working conditions, followed by indicators such as insufficient prestige, impossibility to advance in one's labor career, absence of qualifications for a specific job, uninteresting work, impermanent work, and others.

Changes in the status of the educational-qualification level of cadres achieved through the use of various means of influence are of substantial importance in controlling labor behavior, for this factor largely influences their job requirements. It has been established that /as the educational level rises so does the significance ascribed to professional considerations--doing work consistent with the training of the individual and advancement in one's labor career/. Specialists with higher, semihigher, and secondary specialized training require to a far greater extent compared with categories with a lower educational and vocational level, work in their profession. In their case higher wages paid for performing work not consistent with their training cannot reduce their dissatisfaction or successfully counteract manpower turnover. /In this connection the need arises to seriously discuss and quickly resolve the problem of establishing and maintaining a high level of approximation between requirements concerning the quality of cadres and their structure in terms of their qualifications/. Whenever work requiring qualifications lesser than those possessed by the individual is performed, dissatisfaction arises naturally and to the fullest extent, for the efforts, money, and time spent for gaining such skills are not justified and the implementation of the objectives set by the individual for himself is hindered. On the other hand, the existence of a surplus of cadres with high skills objectively hinders the assessment of the skills themselves through wages, thus creating dissatisfaction also among those who work in their field. In both cases no conditions are created for high labor activeness, to the detriment of both society and the individual. It cannot be denied that, in turn, such factors inevitably affect the social prestige of the different professions, types and levels of education, and acquired skills, deforming them from the viewpoint of their true social value related to the usefulness of the corresponding work and the need for such cadres. This also leads to the deformation of the individual's self-guidance in education and vocational guidance, creating difficulties in securing cadres for various activities and cadres employed in jobs consistent with their training.

Bearing this in mind, our current education structure, broken down by age groups, should result in a number of considerations as to its influence on labor behavior and on the trends and specific decisions to be made for the elimination of shortcomings. According to the December 1975 population census data, this structure has the following characteristics:

Education Structure of the Labor Active Population*

1) Възрастови групи	2) Възрастова структура	3) Образователно равнище и структура						
		4) Без начално	5) Начално	6) Основно	7) Средно		10) Полувисше	11) Висше
					8) общо	9) специално		
12) Общо	100	5,1	16,7	42,0	12,7	12,8	2,5	6,2
13) в т. ч								
25—29 г.	14,3	2,0	7,5	41,6	17,1	20,9	3,3	7,5
30—34 г.	12,4	2,5	10,9	44,4	12,9	16,0	4,1	9,1
35—39 г.	12,2	4,1	11,3	43,6	10,7	15,2	2,8	8,5

Key:

1. Age group	7. Secondary
2. Age structure	8. General
3. Education level and structure	9. Specialized
4. No grammar	10. Semihigher
5. Grammar	11. Higher
6. Primary	12. Total
	13. Including

* "Demographic and economic characteristics of the population in the Bulgarian People's Republic," Vol 1, p 96. Committee for Unified Social Information System of the Council of Ministers.

These data indicate that the young age groups of the working people have far better indicators in terms of education which, in all cases, is a basic component in professional qualifications. This circumstance enables them to apply the achievements of technical progress more successfully. The problem which arises here is that the average level of the educational structure remains unsatisfactory. This cannot fail to hold back the development of technical progress and, on the other hand, the fact that the ratio between specialists with secondary and higher skills has parameters which hinder the existence and maintenance of a substantiated ratio between these two groups of specialists, and does not allow a proper division of labor. Whereas the optimum ratio between them is considered to be 3:1 for the country at large, it is currently 2.4:1 and is even worse in the young age groups. The situation in this area is further worsened by the circumstance that, for a number of reasons related to the condition of the cadres initially and the tasks to be implemented in the first years of socialist reorganization, a number of positions which should have been held by highly skilled specialists are still being held by people of lesser qualifications. The following data provide a certain overall idea of this situation:

Structure of Personnel Employed in Managing and Senior Positions by Educational Level*

a) Занятие	b) Общо	c) Степен на притежавано образование					
		d) Начално	Основно e)	Средно общо f)	Средно специално g)	Полувисше h)	Висше i)
1. Ръководен персонал на държавни и кооперативни учреждения и организации	100	2.1	17,8	15,7	14.9	4,0	45,5
2. Ръководители на предприятия и техните структурни подразделения	100	0,8	13,3	22,1	30,5	4,1	29,2
3. Инженерно-технически персонал	100	0,6	9,6	16,7	51,2	3,2	19,7
4. Главни счетоводители	100	—	2,1	16,1	38,0	1,0	40,2
5. Началници на планово-икономически отдели	100	—	1,7	16,7	32,5	3,3	46,8

Key: a. Job
b. Total
c. Educational level
d. Grammar
e. Primary
f. General Secondary
g. Secondary specialized
h. Semihigher
i. Higher

1. Managing personnel of state and cooperative institutions and organizations
2. Heads of enterprises and their structural subdivisions
3. Engineering-technical personnel
4. Chief accountant
5. Chiefs of planning-economic departments

* "Demographic and Economic Characteristics," Vol 1, pp 334-336.

Consequently, on the one hand, highly-skilled specialists cannot be hired in jobs consistent with their skills due to the fact that there are either less job openings than the number of corresponding specialists or that, at the same time, such jobs are being held by underqualified individuals. On the other hand, as a result of the requirements that a number of positions are opened to people with higher education only, even though the same could be successfully and even more successfully held by a specialist with secondary skills, the desire to acquire a higher education is artificially enhanced. At the same time, however, a feeling of worthlessness is created among cadres with secondary skills. It is precisely this condition in the field of cadres and their jobs that adversely affects labor behavior and the effectiveness of labor activities. Under such circumstances no convincing arguments may be found for preserving the existing situation. The expenditure of funds for training cadres who cannot be used subsequently in accordance with their training or may be used incompletely from the viewpoint of their acquired skills and willingness to work and to display their labor capabilities is the equivalent of making capital investments for the development of new productive facilities which are subsequently not included in production-economic activities or not used fully and effectively. In this case it is a question of the basic production force--the human factor--whose attitude toward the work and factual labor behavior determine, to the highest extent, the effectiveness of any type of production. In this connection a number of complex problems arise: How to eliminate disproportions; how to act in the future to prevent new disproportions; what should be the role of the social management organs and of the population itself in the field of development of jobs, planning the training of cadres, and insuring their full utilization; what functions should be left to economic and administrative methods and levers, what changes are necessary in the field of labor relations and labor legislation in the conclusion or termination of labor contracts, in the field of social and pension activities, and so on.

As in the past and, particularly, under socialist social relations, to the Bulgarian population work has been, to an ever growing extent is, and will remain the basic means for the solution of its priority problems. Its system of values and related labor motivations and attitude toward applied and possible labor incentives determine the possibility for its labor behavior to be controlled on the basis of giving strong priority to economic factors such as income and its real role in satisfying requirements, the influence of market conditions, the organization of social and pension systems, and so on. At the same time, there is greater exactingness concerning labor conditions in terms of the content of the work, working and living conditions, possibilities for advancement, the social prestige of the profession, and so on. Such higher and growing exactingness objectively determines the increased complexity of the process of influencing labor behavior. Whereas in the past it sufficed to use mainly the size of the wage, today, and even more so in the future, this lever will be able to exert its influence through a closer connection with all other factors. /The enrichment of labor motivations requires also the enrichment of the means influencing labor behavior, applied as a system which insures the highest possible labor activity and conditions for achieving the socially necessary mobility in labor/. Consequently, the successful application of the economic approach in controlling labor behavior is largely predetermined by the extent to which the specific solutions of various problems of an economic nature will take into consideration sociological interrelationships among "society-enterprise-individual" in both directions, and the extent to which the combination of interests will be simultaneous and coordinated from the top of the social pyramid to its foundations and vice versa.

Basic Problems of the Application of the Economic Approach in Controlling Labor Behavior

The BCP Central Committee pays exceptionally great attention to problems whose proper solution determines the high effectiveness of social labor and, on this basis, the improvement of living conditions. Such problems pertain mainly to the organization of production-economic relations, and methods for planning and assessing labor activities and providing material incentive to working people and enterprises. Essentially, the need for applying in these and other areas a systematic economic approach was substantiated as early as October 1963 in the Basic Principles of the New System of Planning and Management of the National Economy, adopted by the BCP Central Committee Politburo, and drafted under Comrade Todor Zhivkov's guidance. The subsequent time was a time of application of a number of alternatives of the economic mechanism, reorganizations of the organizational-management structure of the economy, the search for more successful solutions in the areas of prices, wages, the organization of cost accounting, relations between enterprises and the financial-credit system, and so on. Social practice itself confirmed the accuracy of the adopted line for resolving the respective problems. At the same time, it raised with exceptional urgency new problems whose solution largely determines the implementation of the advantages inherent in the economic approach compared with the administrative approach which inevitably hinders the display of high initiative in labor and economic activities. These problems assume prime significance in the light of the decisions of the National Party Conference on improving the planned management of the economy and the socialist organization of labor, and, particularly, in Comrade Todor Zhivkov's report to the 30 January 1980 National Conference of the party, state, economic, and social aktiv.

/The conclusions from the experience acquired so far and from the sociological studies conducted on the influence of the various factors on labor behavior determine the need to focus attention and efforts, above all, on the creation of circumstances in which the economic approach will be applied in a way which will insure the active interaction among the parties in distribution relations: the state--the enterprises--the working people and the population/. Essentially, this means that their interests which are totally manifested in terms of budget income for the state, cost accounting for the enterprises, income and possibility to satisfy needs for the working people (household budget) to be related in a way which will properly take into consideration both the interconnection between the national income and the incomes of each of the indicated parties, as well as their relative autonomy. In order for this interaction to be achieved, the organization of budgetary income should be such as to insure conditions preventing the economic approach from converting into a fiscal approach in which financial interests will be met to the detriment of enterprises and the population and would essentially twist cost accounting and material incentives. In turn, the enterprises applying the economic approach from the viewpoint of their specific interests should be placed in conditions which will enable them to take into consideration to the highest possible extent the interests of the working people in resolving the most important problems of labor relations: labor rating and norming, wage setting, conclusion and termination of labor contracts, and resolution of labor disputes.

It is particularly important in resolving problems in such areas and in seeking more successful solutions to proceed from the understanding that /both enterprises and individual workers and, even more so their households, are specific sociological systems which interact, guided by and not forgetting their most essential interests. The enterprise and the labor collective have a number of things which unify their interests. At the same time, however, these interests cannot be unconditionally interlinked/. The fact that the wage fund is strongly dependent on end economic results and, above all, on profits should not be considered in the least to mean that it automatically makes the size of the individual wage totally dependent on such results.

The need /to review labor relations and labor legislation/ arises in direct relation to the requirements of the economic approach to management in general and the organization of labor relations. /Such relations should be organized on consistently economic foundations, insuring both a strong labor discipline as well as conditions for high mobility of cadres in the field of labor, including, in particular, the conclusion and termination of labor contracts/. Wages, basic wages, means for determining gross wages, paydays and penalties in such areas must become components of individual labor contracts and, at the same time, assume the status of mandatory stipulations in collective labor contracts. On the other hand, there are sufficient grounds for reviewing a number of legal acts in the field of labor relations which place the enterprises in a privileged position in terms of the labor collectives and do not contribute to the timely solution of problems directly related to the creation of a feeling of satisfaction with production and living conditions, the organization of labor and wages, interrelationships, and so on. Such activities should result in /placing individual enterprises under conditions in which they are not only socialist economic organizations but also specific employers within the framework of socialist production relations/.

Not least is the ever clearly realized need, under the conditions of an economic approach to management, to introduce the necessary variety in the organization of labor, considered from the viewpoint of its economic content. The forms of such organization must be developed by taking strictly into consideration the nature of labor activities and the labor feelings of the population. Under Bulgarian conditions, bearing in mind the existing value system, and the scope and gradation of labor motivations and the ascribed and factually manifested significance of labor incentives, /family contracts/ offer substantial possibilities. The family contract has practically confirmed that in a number of activities such as tobacco growing, truck gardening, and others, it is a far more suitable form of labor organization and material incentive compared with other forms. This type of organization, with some modifications, could be successfully applied in other activities such as, for example, animal husbandry and population services such as trade, production of household goods, public catering, fruit growing, viticulture, and others. In agriculture, along with the existing forms of organization, and using the experience of our past and that of other countries, positive results could be obtained by /leasing some sectors and farm crops/ either to individual households or groups of households, or to temporary collectives to farm the land, and so on. Great possibilities are also found in the /contract organization of labor/ and of wages. Unfortunately, this method is being applied to an ever lesser extent even though, like the other mentioned forms, it is far more attractive to the population and the working people and is of a nature which would prevent the appearance of bureaucracy in management and would trigger high labor activity. In resolving these and other similar problems we should always be guided from the viewpoint that /people work for income, whenever the income "works" for the satisfaction of their needs, and that properly organized and used interests in the field of labor are the primary necessary prerequisites for the creation of a highly effective organization of labor in all fields of labor activity/.

The use of the economic approach in management and in influencing the labor behavior of the population and the behavior of enterprises in economic life is an objective need for our development. Its systematic application will unquestionably contribute a great deal to the solution of the problems faced both by society at large as well as various labor organizations and the population. All forms of bureaucracy in management are alien to it. It is effective, for it is based on the objective laws and requirements and interests which shape up the factual labor behavior. Here the socioeconomic processes are more intensive. This circumstance requires and will trigger, to an ever greater extent, the need for the creation of a corresponding mechanism and organization which, under conditions of intensive labor, would be able to maintain the socially necessary balance among the basic labor motivating and stimulating factors and areas. In this connection the problems related to the utilization of the national income for consumption and accumulation purposes, for the development of income and for the implementation of the role of the wages and the social consumption funds, for balancing the economy and, above all, of the purchasing fund and the stocks of goods and paid services, the development of production and the prevention of major gaps between developed needs and possibilities for their satisfaction, and in terms of the tracing and utilization of the indicator of living conditions generally and for the individual social, professional, and other groups in resolving problems of a socioeconomic nature assume exceptionally major theoretical and practical significance. It is precisely in such areas that new solutions should be sought, consistent with the objective laws of our society and contributing to the successful solution of the problems of the building of socialism under existing objective conditions.

5003
CSO: 2200

BRIEFS

MERCURY SELF-SUFFICIENCY PLANNED--Within 3-4 years mining of mercury-bearing ore should begin in Dubnik, Slovakia, producing about 1.5 million tons of ore. Currently extensive geological research for mercury-bearing ore also continues in the areas of Nasger, Luciva, Tancoska and Mernik. According to geologists, the CSSR will eventually become self-sufficient in production of mercury, ending its importation. [Bratislava SMENA in Slovak 1 Oct 80 p 1]

NEW COAL MINE--The first open-pit coal mine in Slovakia began mining operations on 20 September 1980. The mine, located in Lhota pod Vtacnikom, is expected to produce 1.3 million tons of brown coal, of this 36,000 tons in 1980 and 200,000 tons yearly thereafter. Coal mining operations are also anticipated in the Pukanec and Gbely areas. [Prague ZEMEDELSKE NOVINY in Czech 22 Oct 80 p 2]

CSO: 2400

IMPACT OF POLISH EVENTS ON GDR LABOR MORALE ASSESSED

West Berlin DER TAGESSPIEGEL in German 29 Aug 80 p 3

[Article by Michael Mara: "SED Willing To Consider Workers' Criticism--The Effects of the Polish Events and the Economic Situation of the GDR"]

[Text] The East Berlin party and national leadership has followed with increasing concern the events in Poland, the effects of which cannot yet be predicted for either the GDR, Poland's socialist neighbor, or the socialist countries that are strongly tied to Poland in politics and commerce.

In view of the closely attuned national economic plans of both countries, the GDR must count on the fact that the economic results of the Polish workers' strike will also show up in the GDR. East Berlin believes that Poland will not be able to keep all export deadlines and, on the other hand, will depend on additional imports from the GDR to improve its miserable supply conditions. All this at a time when the GDR is faced with problems that have not existed before.

In addition, the mood of the workers is anything but rosy. In addition to a total lack of sympathy for the chronic supply shortages, displeasure is now growing with production pressures and with faults in the economy. The 1981 national plan directive makes businesses responsible for raising production "far beyond the goals that have so far been considered normal." Some state collectives are expected to attain production increases of 10 to 20 percent over 1980. In view of the great problems connected with the fulfillment of present plans, quite a few workers consider such two-digit growth rates unrealistic under the given production conditions. At planning discussions in business enterprises, that were temporarily concluded on Monday (25 August), the statement was made again and again that these goals are "too large by one digit."

However, the SED thinks quite differently. It considers the high planning figures for the coming year simply "the obligatory national minimum goals." It is the primary goal of the planning discussions, that were held in business enterprises for several weeks, to uncover all reserves that might help to surpass planned goals. The SED rejected as unfounded skeptical and critical arguments raised during the planning discussions that the planned production increases would in the end fall on the backs of the workers. "Nobody demands that businesses simply work harder," assured the Cottbus LAUSITZER RUNDSCHAU last week.

According to this SED newspaper, the problem is primarily one of utilizing science and technology for higher productivity and effectiveness, and of using production forces, materials and financial means in even more economical ways. In some places, working time must be better utilized, too. And in general, demands for an above-average production increase are in the "very basic interests" of all.

Workers in the GDR are feeling this more than ever before. In order to prevent decreases in work intensity, and to force all workers to observe "socialist work discipline," business managers are now using rigorous methods that used to be called "capitalist." State collectives, for instance, have introduced control clocks or "passes" in order to achieve "full utilization" of working time. Workers who do not comply are threatened with deductions in wages and bonuses. Other businesses are using unannounced working time controls. The controllers, often members of "management cadres," take count at factory gates of workers who come too late or leave too early.

Some of the workers have little understanding of, or even contempt for, such drastic steps. Workers in the Ruhla Clock Works (Erfurt Bezirk), for instance, objected to the introduction of control clocks by saying that such measures are "immoral" in socialist society. The Erfurt party newspaper DAS VOLK defended the measure: many GDR citizens have forgotten how much hard work is required for social progress. They must be reminded with control clocks "that social policy is no self-regulating automation but rather comes from the productivity of our economy."

In the Leipzig Industrial Armatures VEB a strict system of passes has angered the workers. The LEIPZIGER VOLKSZEITUNG commented that several workers in this enterprise believe that "they should loudly defend their rights whereas, in reality, they should make apologies for neglecting their duties."

In other businesses there were animated discussions on wage and bonus deductions. The workers concerned felt that they had been hit in the most sensitive place, the pocket book.

The employees of a Leipzig industrial enterprise which is in the red demanded publicly that "the management of the enterprise be fundamentally changed." The economic situation, they wrote to the local party newspaper, of their firm is "topsy-turvy." Because the management lacks overview, there is no continuity in production and a lack of working morale. Some 60 to 70 percent of the monthly production always has to be accomplished in the last 10 days. Workers borrowed from other branches of the firm then help out in the assembly process. The high point of this process is "celebrities night," when everybody including the manager tries to fulfill the monthly quota in one special night shift.

Even though working morale is not everywhere at such a low level, there is no question in the minds of production workers that quality work has to be done in the interest of the economy and their own high standard of living. However, they make economic functionaries responsible for the fact that "quality work" is often made impossible through interruptions in production and other failures. For instance, during the planning discussions criticism was voiced that "irregular material supplies" and other organizational mismanagement, for which the workers are not responsible, resulted in interruptions in production which could hardly be made up, and thereby in great losses in business effectiveness. Therefore, the workers are more frequently demanding, in the firms themselves and in the local SED newspapers, "better management."

Conditions of this kind stir up dissatisfaction. GDR workers are not thinking of joining the striking Poles. They know very well, and are proud of the fact, that economic conditions in their own country are essentially better than in Poland. Hardly anybody seems ready, therefore, to jeopardize the hard-earned standard of living through strike actions whose consequences are extremely grave in a socialist country, as experience tells. However, the "Polish example" could encourage GDR workers to insist more strongly on the elimination of deficiencies. It is probably for this reason that party, economy and union functionaries assured the workers at the end of the planning discussions in the past few days that their "good thoughts," their proposals and their criticism would be "carefully examined and if possible acted upon immediately."

8889
CSO: 2300

GERMAN DEMOCRATIC REPUBLIC

WEST GERMAN EVALUATION OF GDR HOUSING CONSTRUCTION PROGRAM

Bonn VORWAERTS in German No 33, 7 Aug 80 p 8

[Article by Walter Osten: "Elevated to a Matter of Prestige; GDR Construction Program up to 1990 Has Great Aims"]

[Text] The GDR government has raised to a question of prestige the realization of the SED promise "to find an answer to the housing construction question as a social problem by 1990." In 1980, 10 percent of the national income is to be used for housing construction, in the past decade 100 billion marks were expended for this purpose, according to Honecker.

The up-to-date results of GDR housing construction policies are quite presentable--in regard to their absolute quantity as well as in comparison with other Eastern bloc countries, and in some respects even in comparison with the FRG. The figures speak for themselves: from the beginning of 1976 until May 1980, 710,000 apartments were built or repaired, 60,000 more than were provided for in the plan. "Living conditions for 2.1 million citizens were noticeably improved," Construction Minister Junker stated at the Seventh GDR Building Conference. According to the 1981-86 Five-Year Plan, 600,000 new apartments are to be constructed and 330,000 older apartments are to be modernized.

The GDR does not have to be afraid of comparisons with other countries, even though the goal, already proclaimed under Ulbricht to "catch up with and even pass" the FRG in this field cannot be realized before the end of this decade. This is true in spite of the fact that in GDR statistics the number of apartments available at the end of 1978 had to be lowered from 24.7 to 23.4 million--with the number of households at 24 million--and to the same statistics had to be added that at that time 1.9 million apartments were still "insufficiently equipped with sanitary facilities."

The only statistics in which the GDR and FRG are just about even is the number of 400 apartments per 1,000 inhabitants. The average apartment size in 1978 was 58 square meters for the GDR, 78 square meters for the FRG. The GDR cannot compete with the FRG in new apartment furnishings, not even to mention the greater share of older apartments in the total number of apartments in the GDR.

The GDR does better in comparison with other CEMA countries. The speed of apartment construction is still greater in the USSR than the GDR, but the per capita quota in living space in 1979 already attained a useable space per family member that is as large as the USSR and Poland envision it for the end of this decade.

One field where the GDR is not behind the FRG is the cost of rent. According to Honecker, rents in the GDR have since 1972 "been lowered or fixed on their respective level and are not to be raised in the eighties." Rent for workers and employed persons with a monthly salary of up to M 2,000 is up to M 1.25 in East Berlin, and between M 0.80 to 0.90 per square meter in the GDR. In the FRG, rent for square meter increased from DM 3.11 in 1970 to DM 4.60 in 1978. The share of rent in the net income is in the GDR only a fraction of what it is in the FRG.

In order to fulfill the GDR housing construction program by 1990, far-reaching economic measures are needed. Minister Junker named the followed at the construction conference: investments for industrial construction are to be lowered by 15 percent in favor of housing construction. Construction times are to be decreased by from 30 to 50 percent. Work productivity must be increased by 4 percent annually, "in the decisive branches by 6 to 7 percent: 80 to 90 million work hours are to be saved through "promotion of work readiness, order and high discipline." Finally, "the energetic optimization of the construction process" requires a transition from increasingly expensive heating oil to solid fuel, that is soft coal.

Single home construction and building planning in the country were only of secondary importance at the Berlin conference. Their share is to be a total of only 10 percent of new constructions.

There are, of course, credits with from 1 to 4 percent interest available for construction projects of this kind, as well as for furnishings, and this interest can even be paid for in terms of an increasing number of children. The essential probelm, the lack of building materials, which has led to widespread black market dealings and thefts, was not discussed.

Oil Prices Slow Down Construction Program

The up-to-date share of about 40 percent of the Workers' Housing Construction Union (ABG) in new constructions is obviously going to remain the same. Members of this union are obligated to contribute their own work to the construction of apartments and houses.

Beside these calculable expenses there are many other incalculable factors which can have a negative influence on the completion of a housing construction program. Junker's program includes a "far greater productiveness in patents and licenses," but also "inventions which codetermine the world production level." Along this line, the GDR already tried in the past year to utilize West German and Western knowhow through contracts with apartment construction firms.

Prices for raw materials that have to be bought abroad are also beyond the influence of GDR planners. Oil prices have even stronger effect on construction programs. There is a limit to the extent in which oil can be replaced with soft coal with its polluting effects, and changes of this kind result in new problems for the environment. Taking all this together, the housing construction program in the GDR could have a shaky future, especially since the GDR growth rate has shown decreasing tendencies for years, even though it has recovered on occasion.

8889
CSO: 2300

GERMAN DEMOCRATIC REPUBLIC

WEST GERMAN COMMENTARIES ON GDR AGRICULTURAL SITUATION

Results for First Six Months

Bonn DIE LANDWIRTSCHAFT DES OSTBLOCKS in German Vol 18 No 31/32, 1 Sep 80 pp 11,12

[Unattributed report: "GDR Agriculture in the First Half Year"]

[Text] The GDR has entered this year's harvest with an increased grain acreage and has slightly increased its livestock during the first half of the year. These are the two salient points in the altogether concise data concerning the development of agriculture during the first six months of 1980. These data show that the grain acreage is now 2.56 million hectares, compared to 2.50 million hectares last year. As other data indicate, the increase in grain acreage corresponds to winter grains which cover 1.958 million hectares (1979: 1.890 million hectares); the summer grain acreage, 601,200 hectares, is a scant 9,000 hectares smaller than in 1979. For sugar beets (less 7,000 hectares, down to 258,000 hectares) and potatoes (less approximately 8,000 hectares, down to 519,300 hectares), too, cultivated acreages have been reduced this year; vegetables were cultivated on 73,800 hectares. Concerning the vegetative development of cultivated plants, the mid-year report of the East Berlin Bureau of Statistics notes that, especially in April and May, unfavorable weather has caused "damages to agricultural crops" which, however, have been offset by "renewed cultivation and attentive care of the crops."

No data are given on the supply of working resources to the agriculture during the first 6 months. The enterprises have received nitrogen, phosphate and potash fertilizers as well as lime "as planned." Nevertheless, the output of the potash fertilizer industry was only 1 percent higher than during the first 6 months of 1979, while 7.8 percent more agricultural machinery was produced.

Data concerning the anticipated yield of the grain harvest are not given in the mid-year report, nor are they to be found elsewhere in the GDR press. Western observers estimate the GDR grain production at 8.2 to 8.5 million tons. With a grain demand of approximately 12 million tons (12.5 million tons according to other data), East Berlin should have to import at least 1.5 million tons; it will be hard to obtain all of that amount on the CEMA [Council for Economic Mutual Assistance] market where, in 1980, only an average harvest can be expected (1976-1979 average: approximately 289 million tons).

In the field of animal production, all animal stocks have increased, compared to last year's census date (20 May 1979), and the enterprises have delivered more animal products than last year during the same period. The volume of state purchases during the first 6 months were higher than in 1979, by 1.5 percent for cattle (1.124 million tons), 1.8 percent for milk (4.014 million tons), and 5.7 percent for eggs (2.559 billion eggs). According to the official data, the animal populations have been expanded as follows (we have added data corresponding to 20 November 1979):

	Population on: (in 1,000)		
Animals	20 May 1979	20 Nov. 1979	20 May 1980
Beef cattle, all together	5,699	5,596	5,763
of which: cows	2,119	2,124	2,216
Pigs, all together	11,638	12,132	12,247
of which: sows	1,226	1,248	1,258
Sheep	2,315	1,979	2,396
Laying hens (million hens)	26.5	26.5	27.5

As for foods, including luxury foods, retail sales increased by 0.6 billion East German marks during the first 6 months, i.e. 2.4 percent. The "quantitative goods supply" during the first 6 months of 1980 increased by 2 percent for meat and sausages, 3 percent for poultry, 3 percent for whole milk cheese, it remained unchanged for whole drinking milk and increased by 11 percent for fresh fruit, compared to the 1979 reference period.

No Shortage of Agricultural Workers

Bonn IWE-TAGESDIENST in German No 125, 21 Aug 80 p 2

[Report from Berlin: "GDR Agriculture No Longer Has Trainee Problems; Many LPG's Have More Applicants Than Training Slots"]

[Text] While, for many years, agriculture was shunned by those leaving school in the GDR, it now seems to exert a growing attraction on youth. An increasing number of young people are applying for agricultural jobs. "Today, more students leaving school are knocking at our door than we can accept. We can even make a selection. Fifteen years ago, however, we had to go from door to door, to drive to the schools and to keep asking, soliciting, persuading," recalls, for instance, Roland Struch, manager of a large LPG covering 10 villages near Gera. Then, even the children of cooperative farmers left the villages. After graduation, they went on to the industry, to a trade or to the construction sector. Today, not only do many children of cooperative farmers want to stay in the villages, but an increasing number of city youths are deciding in favor of a job in the agriculture. Therefore, those who have not finished the 10th grade have little chance of becoming, for instance, mechanizator.

There are a lot of reasons for this surprising turnabout. One of the most important: Agriculture is no longer as backward as it still was in the 1960's when the lack of trainees was especially acute. The change to industry-like production conditions has reduced the contrast between city and country. Agricultural work has become easier; hard manual work, to a large extent, has become a thing of the past. For many youths, driving combines and tractors has its appeal. Like working conditions, living conditions in the villages have also improved. Today, not a few young people also come to the village because they want to work outdoors and to escape the city "stink."

9294
CSO:2302

HUNGARY

FIRST HALF 1980 ECONOMIC STATISTICS RELEASED

Budapest HETI VILAGGAZDASAG in Hungarian 30 Aug 80 pp 4-5

[Article: "Our Economy in the First Half of the Year: What Does the Balance Sheet Show?"]

[Text] Statistics for the first half of the year reflect favorable trends in our balance of international trade. Production and productivity data are less favorable. It is true that the fall in industrial production is not large, but it still indicates slower than desirable adaptation to changing conditions.

The definite impression obtained from the recently published data on the first half of the year is that the measures adopted since last year with a view toward restoring economic equilibrium have proved successful.

Let us first look at the so-called nonruble trade balance. Although the balance continued to show a deficit during the past half year, the excess import (including the balance of transportation costs) was only $15.3 million. Considering that the deficit of the first half of last year was approximately $417 million, the improvement may indeed be termed spectacular. In the ruble accounting area (again including the balance of transportation costs) excess imports reached approximately 305 million rubles, i.e., substantially more than the 187 million ruble deficit of the first half of last year. These excess imports are in line with the goals formulated in the plan.

Finally, the combined trade balance shows an approximate deficit of 9.5 billion forints, which represents only 45 percent of the 21 billion forint deficit for the first half of last year. Imports not covered by exports (i.e., the deficit) have declined below the level of the first half of the last year. What is even more welcome, less than one tenth of the diminished deficit was in convertible currency.

While trade balance improved substantially, production indicators point to a slight slowdown. The volume of industrial production (with allowances already made for price changes) declined by 1.8 percent. Construction industry output was 3.5 percent below the level of the first half of 1979; agricultural purchases declined by 2.2 percent. Among the chief industrial sectors, output of the building materials industry rose by 4.3 percent;

output of the electrical energy industry went up by 2.7 percent. Light and food industry production essentially remained at last year's level. In other sectors, output has declined. The volume of domestic shipments, representing almost four fifths of industrial sales, declined in line with the guidelines of the plan. Wholesale and retail trade received more goods from industry than in the first half of last year. However, industrial sales for investment purposes declined by 15 percent, while those for production purposes went down by 6.7 percent compared to a year ago.

In analyzing the above data one must be mindful of the fact that they refer to gross indicators which measure production by the output of enterprises. There are indications that some enterprises are increasing their production operations even though their sales are stagnating or declining, by beginning to manufacture certain components in-house, instead of purchasing them as in the past. Therefore, it is likely that net industrial production declined less than gross output. (We can only speak in terms of probabilities since half-year statistics are not suitable for precise measurement of net production.)

No matter how we look at it, the output of goods and industrial sales remained below the first half of last year. There are good reasons for this. Restrictions on investment puchasing power (necessary to improve equilibrium) had the effect of substantially reducing demand for capital goods. This is why investment-related industrial sales went down. Due to the July consumer price increases of last year, the growth in consumption by the population, calculated in terms of real value, has slowed down. Finally, stagnating industrial production requires already existing or even smaller inventories. This eliminates production generated by the earlier general trend toward increasing inventories. A slowdown of final output has naturally been coupled with a decline in "productive consumption," since a smaller quantity of finished goods requires smaller quantities of semifinished goods and component parts. Declining domestic demand made it difficult for many enterprises to sell their products at home. This could be compensated for only partially by expanding exports. (This is because a substantial portion of products that are unsaleable at home because of declining domestic demand is not up to export standards.)

Still, exports have grown dynamically: we exported 8.5 percent more than in the first half of 1979. In particular, exports to advanced capitalist countries grew by 29.7 percent. Exports to developing countries went up by 13.3 percent. On the other hand, exports to socialist countries have declined slightly (by 2.8 percent).

These indicators have been calculated on the basis of current prices expressed in forints. If we eliminate the effects of changes in export prices, the volume indicators obtained show that our socialist exports essentially remained at last year's level; our exports to advanced capitalist countries went up by approximately 20 percent, while exports to developing countries increased by about 5 percent.

Data expressed in forints, calculated at current prices, show a 1.3 percent decline in imports. Behind this, however, there is a somewhat large

(2.1 percent) decline in the quantity of imports. Our socialist imports declined by 6.7 percent at current prices, or 1.8 percent at constant prices. Our imports from advanced capitalist countries increased by 1.4 percent at current prices, or declined by 5.1 percent at constant prices. Our imports from developing countries increased by 21.8 percent at current prices, or by 14 percent at constant prices.

Output per employee was about one percent higher than in the first half of last year. In the past we have been used to much more rapid improvements in productivity: for example, in 1979 the volume of production per employee grew by 5 percent. (If the assumptions regarding a more favorable dynamic for net production compared to gross production are correct, then the slowdown in productivity growth is also less than indicated by the gross statistics.)

The decline in the industrial workforce has accelerated: the number of industrial employees declined by 46,200 or 2.8 percent compared to the first half of 1979. (In 1979 there was a 1.6 percent decline in the workforce.) Following this decline in the workforce requirements of industry, there has been a measurable improvement in the balance of the "labor market" and service sectors have been able to fill more jobs.

Production of the construction industry declined by 3.5 percent relative to the first half of last year. The worsening of business trends in the construction industry led to a result welcomed by those needing construction work: compared to last year, there were fewer construction requests rejected by the construction industry.

In the area of agricultural products, purchases of plant products remained below the level of a year ago. This was in part due to later harvesting of vegetables and fruits. Purchases of live animals and animal products increased slightly.

Socialist organizations spent 67.1 billion forints on investments during the first half of 1980. This is 11.5 percent less than a year ago. Payments for investments by enterprises declined especially sharply (by 15.9 percent), while payments for state investments declined at a below-average rate (5.6 percent). Enterprises originated much fewer new investment projects. This is shown by the fact that some bank loan opportunities remained unused.

After the production data, let us now take a look at consumption statistics. Retail sales were 10.7 percent above the first half of 1979 at current prices, but consumer prices increased by 12.9 percent in the same period. Thus, retail sales declined by almost 2 percent, calculated at constant prices. Although the consumer price index shows a 12.9 percent rise, in this connection it might be useful to point out that this is an indicator of price rises since the first half of 1979. Compared to prices on 1 January 1980, prices at the end of the first half of the year went up by 1.9 percent.

The average monthly wage of employees, including supplementary payments, was 9.3 percent above the level of the first half of last year. Monetary social payments increased at a rapid rate and their effects have partially compensated for a decline in real wages. An evaluation of real wages and real incomes must take into consideration the fact that the real income of those with a low income has practically not changed at all, while that of high income groups declined as a result of the fixed amount of supplementary income, independent of income levels, paid as a partial compensation for the June 1979 price increases.

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OFFICIAL COMMENTS ON RESTRUCTURING OF PRODUCTION

Budapest MAGYAR HIRLAP in Hungarian 21 Sep 80 p 5

[Interview with Dr Laszlo Horvath, deputy chairman of OT (National Planning Office), by Jozsef Fahidy: "We Must Know the Market"]

> [Text] Dr Laszlo Horvath was born in 1921. He is a chemical engineer, candidate of economic sciences, winner of the Kossuth Prize, and an honorary university professor of MKKE [Karl Marx University for Economic Sciences]. He became managing director of the Taurus Rubber Industry Enterprise in 1966; in November 1975 he was appointed deputy minister of the heavy industry, and as of 1 July 1977 he was appointed deputy chairman of the National Planning Office.

Changing the production structure is a key job. Our growth, and in the stricter sense the rejuvenation of our economy, depend on how well we will succeed in accomplishing this multifaceted, complicated task.

Dr Laszlo Horvath, deputy chairman of the National Planning Office gave his views about this to Jozsef Fahidy, our reporter.

[Question] How is the reshaping of product structure progressing in our economy? Has this not become a campaign in the bad sense of the word?

[Answer] The question cannot be answered by a yes or a no, and mainly, it cannot be answered in a simplified way. Some of its exists, some of it does not. Some of it is there because in recent decades we have somewhat gotten used to campaigns. However, the new, more strict regulatory system, mainly the price system, works against the bad habits. This has "awakened" those managers who think that this campaign task also can be resolved by platitudes.

To make the answer even less simple: there are also some tasks of a campaign-character in this activity, such was for example the one-time inventory taking the enterprises and the directing organs carried out on the basis of the government's decree issued following the 1977 MSZMP Central Committee resolution, and which had to be updated this year--taking into consideration also the effect of the already mentioned new regulators. I wish to mention that there were problems also with the work of taking stock. There was variation in the results in spite of the fact that the National Planning Office as well as the National Technological and Development Commission [OMFB] published guiding principles, and even some of the portfolios also worked out methods. Perhaps most of the correct evaluations were made by the Ministry of Heavy Industry's enterprises. As is well known, international comparative data have been collected and studied for several years in this ministry.

Familiarization with an understanding the tasks is progressing more slowly than required. This of course also has its own causes and reasons. We have been dealing with problems of structure for not only the last few years, but for a decade. But in the beginning those criteria were very difficult to develop on the basis of which the favorable, profitable products could be separated from the unprofitable ones. Decisionmaking was further complicated by the fact that the fate of products had to be decided not for the short-range, but for a long period of time since development, introduction and full-rate production of each product requires a very long time.

Our pricing system, the product's profit content, also has supplied little guidance so far for these decisions, particularly in the last decade when the world market prices changed rapidly. If our pricing system and financial regulators compensated for the effect of foreign price changes, that did not help this situation either: even though the enterprises made their calculations more easily, the national economy came out the loser. The material and parts which were cheap for the enterprise were very expensive for the country, and even though the enterprise could profit much from the export, the national economy lost. It is obvious that it is even more difficult to predict prices for as far as a decade ahead! The decisions based on profit content also proved to be in error, one after the other. This also helps explain that numerous uncertainty factors in connection with reshaping the product structure hindered the work of the enterprises. We have also experienced some doubts: even though the directing organs urge that the production structure be improved, no one can say how this is to be actually implemented. And this uncertainty greeted the new methods of evaluation mentioned earlier.

Yet, even in spite of the obstacles, some good results are appearing already. In heavy industry, for example, in 1980 production of 223 new product types is beginning and 153 products are being discontinued. The Taurus, the Kobanya Pharmaceuticals Factory, the Tiszamenti Chemical Works, the petroleum industry, etc. have promising new products. The ratio of products is shifting in the metallurgical industry, and a few new items have also appeared, mainly to replace imports. Significant modernization of the product structure is under way in the machinery industry also; for example at the Ganz-MAVAG [Hungarian State Iron, Steel and Machine Factories] where 45 percent of the products were classified as obsolete, but where at the same time significant new products are being made, among others some equipment for nuclear power plants. At the Hungarian Railroad Car and Machine

Factory the manufacture of railroad vehicles will come to an end this year, and the ratio of subunit production will increase. There is rapid growth in the telecommunication technology and instrument industry enterprises--here the products become obsolete in 5 to 6 years and have to be replaced by new ones. Rapid product turnover is also characterstic of light industry: this year a large number of its products are being replaced and even giving a list of examples would be difficult. All these are encouraging results, but they are only the beginning. The larger and more difficult part of the work is still ahead of us. This is even more so because industry and the foreign trade only in the cases of a few product groups have such a broad network which would be able to effectively "work" the foreign markets, to measure the demands, to do modern, high-efficiency selling. Great efforts were made in recent years to change this. One of the indications of this is that mixed enterprises were formed for quite a few foreign markets. (The expeditiously built-up network is very important because primiarily it is the one in contact with the customers and it is able to relay the demands and--perhaps even more important--the information about the price offers of the competitors, about their financial and other delivery conditions.)

But--and I wish to emphasize this--the process of growth in the right direction is only at its beginning. Intelligent handling of the markets, the so-called marketing activity taken in the broader sense, and building up the partnership relationships, also require work which takes a long time, and call for no less effort than developing each product and putting it on the market. And in order for us to be able to make the correct decisions in connection with developing the production structure, we must know what our competitors are offering today and what their capabilities are, what they are planning; what will they be offering in the future. How far we have to see ahead varies with each business; but today we know little about the world--often even about our own domestic markets.

Altering the product structure has another viewpoint which cannot be neglected: the modern product-pioneering technology requires well-prepared professionals in management positions as well as at the work benches. (Although it is true also that modern, automated technology assumes utilization of fewer technically trained personnel--automated machinery can be operated by merely pushing a button...) However, maintenance and correcting problems are complicated and require greater technical preparation, even if there are exceptions to this also. In general terms the standard still is that modern technology--including the competitive products--requires educated people in the professional as well as in the human sense. And we must always mention these two kinds of requirements together--and we have to satisfactorily fulfill them if we are to solve satisfactorily the tasks of reshaping the product structure.

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NEW ENERGY SOURCES FOR MEETING ENERGY DEMANDS DESCRIBED

Budapest ENERGIAGAZDALKODAS in Hungarian No 6, Jun 80 pp 241-244

[Article by Academician Dr Karoly Szendy and Candidate Dr Istvan Szergenyi: "Role of New Energy Sources in Supplying Domestic Energy Demand"]

[Text] 1. Introduction

Rising prices for crude oil, begun in 1974 and continuing since then, have an effect on all energy sources. Nuclear energy programs have been speeded up, and both coal mining and coal use are on the upturn. The lion's share of the potential utilization of hydrocarbons is concentrated on these two energy sources. This trend will be even more pronounced in the next few decades. Therefore, national governments have reevaluated their earlier energy policies. Coal and nuclear energy programs have received needed support and the necessary publicity. At the same time, in countries where this was possible, work has started on the exploration of hydrocarbon deposits with more expensive yields (Alaskan oil fields, off-shore oil deposits, etc.).

Throughout the world, a great deal of emphasis is being placed on attempts to conserve energy by increasing the efficiency of energy utilization processes and reducing losses. In a number of countries, primarily the energy-poor ones, steps have been taken to minimize the growth of total energy use by creating an economic structure that can generate a given level of production value with the minimum of energy use. Finally, they started to look for new energy sources; these, however, will produce only long-term solutions. These, on the other hand, require that the necessary steps be taken right now.

In addition to supplying increasing energy demands, with a view toward a relative reduction in hydrocarbon demand among primary energy sources, i.e., taking the above into consideration, the most important steps may be summarized under the following headings:

--increasing use of nuclear materials and coal;

--energy conservation in industry, agriculture, the household and communal sector, transportation as well as the creation of a less energy intensive economic structure;

--use of new energy sources.

In this article we will discuss new energy sources and, in particular, geothermal energy, biogas and solar energy.

Most of the new energy sources (solar, wind, geothermal energy, biomass) have been known, in fact, for a long time. Their importance, however, had declined in the age of cheap energy sources. Attention was focused on them once again at the time of the 1974 oil crisis. Initially they were overemphasized due to psychological factors; today it is possible to draw up a more realistic picture.

The name "new energy sources" does not always mean "new" in a literal sense. The point is that an energy source that has been used in the past is now in this category because the technology of its use and the methods of its application are new. This provides an opportunity for relatively rapid and widespread distribution of the energy source in question at a price that can compete with traditional energy sources, under conditions that are not obsolete or unfavorable in comparison.

According to realistic estimates, new energy sources, in an extended sense, cannot supply more than a few percent of the total energy demand by the year 2000. It is still necessary to take them into consideration because their use can contribute to reducing demand, primarily oil demand. Thus, their use is under consideration throughout the world. CEMA countries, in particular, plan to engage in joint efforts to utilize new energy sources within the framework of international cooperation and specialization.

In the coming years, cooperation and specialization will include a survey of the applicability of new energy sources, solution of emerging technological problems, manufacturing of equipment necessary to bring them into widespread use, and related cooperation as well as a survey of mutual deliveries. Various CEMA organizations have been assigned the tasks of ensuring smooth program implementation, avoiding duplication of efforts and expenses. Within the cooperative framework, individual countries can ensure that their participation is in line with their particular conditions mainly by working through the CEMA Permanent Committees.

2. Considerations for the Evaluation of New Domestic Energy Sources

Evaluation of the application and introduction of new energy sources should be based on long range considerations because research and development tasks for the medium term can best be defined on the basis of long-term considerations.

The following factors should be taken into account in defining the domestic role of new energy sources:

--geographical and production conditions of our country;

--research and development bases necessary for the introduction of new energy sources and providing scientific backup;

--development of new equipment (possible license purchases) and production startup;

--capital cost of production startup and setting up of new energy sources;

--operating costs;

--participation in international cooperation, including export of new equipment;

--degree of automation;

--useful life of new equipment;

--preparation of social acceptance.

Most of these factors are economic, although the desired utilization of new energy sources requires the solution of a number of engineering and, in some cases, basic research problems (e.g., electrical energy production from solar energy). Solution of scientific and engineering problems has been proceeding at its own rate in every country. In the future, scientific cooperation is expected to gather strength.

It is no simple matter to subject the use of new energy sources to economic analysis. Therefore, it is necessary to make some allowances that blunt the presision of comparison between the economics of using new or traditional processes. This is justified, on the one hand, by the variations in time among the economics of various energy production processes. A major role is played by uncertainty as to the future cost requirements of a process that is new and expensive at present, but may be widely applied in the future, or as to the extent of cost reductions due to the use of mass production methods. The difficulty of comparison is compounded by the discrepancy between the ratio of capital to operating cost as a percentage of unit energy cost obtained by traditional or new methods.

In spite of the difficulties sketched above, some kind of economic analysis is indispensable. It is necessary, however, to define the principles to be followed in the course of such an analysis. Under domestic conditions, there is justification for comparing unit capital cost of the use of new energy sources to the average unit capital cost of eocene mines. In this regard, there are estimates indicating the excess cost (or saving) associated with the creation of the same annual quantity of energy (heat) based on a new energy source when compared with the creation of coal production capacity. This data compares present capital cost, i.e., it neglects the presumably different variations in time in the unit capital cost of the two types of energy, leading to a distortion of the present estimate of this ratio. It should be pointed out that (although this does not affect the size of unit capital cost) this compares unit costs associated with large scale installations to unit capital costs of small capacities dispersed throughout the country. A very important question with a major impact on economic benefit is the varying useful life of installations and differences in current operating costs of different energy (heat) production processes.

In this comparison we restricted ourselves to a rough estimate of capital costs. Comparison of highly important operating costs requires further analysis. In many ways, due especially to opportunities that must be used in a decentralized manner, there are similarities between new energy sources and energy rationalization investments. A comparative study, beyond the purpose of this paper, may be done on the basis of this recognition.

Examination of international experience shows that state support is being given to encourage the distribution of new equipment. This is to promote mass production of new equipment which will lead to a substantial reduction in production costs. As a result, the expectation is that with the reduction in or elimination of support, the accelerated spreading of new equipment will continue spontaneously.

Of course, each country must give preference among all opportunities open to them, to those new fields of application that can lead, in the shortest possible time, to a level of production technology where the use of the new energy source becomes economical through the application of mass production methods.

It has been stated that the use of new energy sources can be successful only if research and development activities are purposefully coordinated with startup of production and new types of application. Therefore, direction of research, development and production startup is assigned to a group within specialized institutes associated with each research topic, supported and encouraged by the central authorities involved.

3. New Energy Sources Discussed in the Article

Based on the above criteria, the following new energy resources must be considered in our country, for the period up to the year 2000:

--geothermal energy;

--biogas and

--solar energy.

Due to the geographical and geological conditions of the country, a number of other new energy sources are either not available for use, or can be used only to a negligible degree. It must also be remarked that there are very good reasons for the attention given by specialists to the question of producing liquid and gaseous hydrocarbons from coal. Yet, other countries are ahead of us in the solution of this problem because of more favorable conditions and available experience. In view of the long-term importance of this topic, accomplishments abroad must be watched closely. We do not deal with this area in this paper because a mere survey of the results achieved thus far would require a separate article.

The three energy sources mentioned are found within the nation's territory in a dispersed, i.e., nonconcentrated pattern. Geothermal and solar energy may be used to supply low temperature (60 to 95 °C) thermal needs (heating, hot water supplies, drying). Although the use value of energy obtained in this manner is less than that of hard coal (since hard coal is suitable also for producing energy at higher temperatures), the advantage lies in avoiding the problems associated with the transportation of coal to small consumers and local burning (air pollution).

3.1 Domestic Utilization of Geothermal Energy

Due to favorable geological conditions, our geothermal energy sources can be obtained in about one half of the nation's territory from 1,000 to 2,000 deep wells bored through porous rock, in the form of water at a temperature of 60 to 85 °C. According to expert estimates, in areas where geothermal energy is feasible (from the standpoint of sources and application) the unit capital cost necessary for its use is approximately equal to the unit capital cost of eocene mines. Based on the present state of exploration, geothermal energy may provide the equivalent of 1 million tons of oil, i.e., 10 Pcal of thermal energy (1 Pcal=10^{15}cal=4.184x10^{15} joule) by the year 2000, increasing gradually. According to forecasts, this could be produced for 100 years, primarily for supplying the thermal requirements of buildings and agriculture. With exploitation started 18 years ago, the annual production of geothermal energy in our country now stands at the equivalent of 80,000 tons of oil. It is used to heat and supply hot water to buildings, to heat hothouses and dry produce in agriculture.

In addition to the further development of water treatment technologies and heat exchange devices, a major task is to provide the conditions and technologies required for public utility-type services. Organizational direction of these activities has been assigned to the Central Mining Development Institute working under the Ministry of Heavy Industry. The small group working on the "Geothermal Energy Plan" is keeping an eye on the use of low temperature heat, as well as the opportunities for extracting energy from deep layers of rock (at 3,000 to 5,000 meters) by so-called "heat mining," as described in U.S. and USSR research. Since this work is still at an initial stage and the associated cost is considerable, we can only aspire to an observer's role. However, it would be sensible to collect and process the deep drilling data of the Oil and Gas Industry Trust with a view to exploring the opportunities for domestic heat mining.

3.2 Domestic Utilization of Biogas

The raw materials forming the basis for biogas (agricultural and industrial scrap materials) are available in our country. The aerobic and anaerobic fermentation necessary for the chemical processes may be started by means of livestock manure. For as long as 30 years this energy source has been produced in our country and some small installations have been built. It is once again useful to look at the economics of establishing large scale biogas-producing installations in the new energy situation.

The organic fertilizer left as residue after the fermentation is highly valuable in agriculture. According to optimistic estimates, potential domestic production is equivalent to 1 million tons of oil, or 10 Pcal of thermal energy. This would require about 1,000 plants with 10,000 to 12,000 cubic meters of daily capacity. Therefore, it is sensible to count on only a fraction of the above-mentioned potential energy value. Unit capital cost is on the average 4 to 6 times higher than eocene mines. It seems likely that capital costs may be reduced by using mass-produced new types of concrete vats (e.g., using plastic foils). In view of investment problems, its importance may increase only in case such a cost reduction is possible in industrial applications.

The question of biogas production has been in the hands of the Energy Management Institute (and its predecessor) with minor interruptions.

3.3 Domestic Utilization of Solar Energy

In view of the geographical situation and meteorological conditions of our country, as well as the level of the technological development of presently available solutions, solar energy may be used as low temperature heat. Application of solar energy is shown by investigations to date to be a suitable solution for the air temperature control of buildings with light structural elements (housing estates, department stores, schools, nursery schools, etc.) combined with auxiliary hot water supplies and heating.

Solar energy collectors should be designed into the structural elements of new buildings. Favorable location of buildings may improve the efficiency of utilization. Other countries with largely similar geographical conditions are also considering low temperature use of solar energy. For example, swimming pools are heated by means of solar energy. This application however, can be considered only infrequently due to our relatively favorable balneological conditions (hot springs). It must be remarked that favorable solar radiation may be used in agriculture for drying of produce.

The first steps have been taken toward the utilization of solar energy in our country. Domestic production of collectors is feasible on the basis of local development, possibly with the use of foreign cooperation. Similarly, auxiliary equipment, heat storage facilities and regulators may be produced at home. On the other hand, exploratory analysis shows that the unit capital cost necessary for the utilization of this energy source is one order of magnitude higher than the capital cost of geothermal energy or eocene mines. Its advantage is that it may be set up in any area of the country. If production is started with a suitable technology based on institutional development work, then by the year 2000 it is possible to achieve production of thermal energy equivalent to 1 million tons of oil, but only with the following conditions:

Lacking suitable measurement data, according to preliminary investigations carried out to date, production of the heat equivalent of 1 million tons of oil per year will require approximately 15 square kilometers of collector surface. Therefore, the assumed target above would require the production of 15 square kilometers of collector surface by the year 2000. Of course, this might lead to a substantial reduction in production costs. Nevertheless, it is questionable whether, even if the necessary technology is available in the last decade of the century, the domestic industry will be capable of producing in such quantities. This points out the need to be very careful in judging the ideas characterized in numeric terms above.

At present it is debatable whether domestic use of solar energy is economical in comparison with other energy sources. Only small progress can be expected in the medium term regarding the use of more advanced engineering solutions. Experience obtained from experimental plants established in the meantime, combined with a continuous watch over foreign solutions, will promote the design of new systems. In this area, favorable license purchases may be considered. The Construction Science Institute is suitable for directing development work, in view of its knowledge of techniques of utilization. This ensures that results achieved in other areas of solar energy utilization will be followed (solar generating plant via heat power plant or semiconductor photoelectric cells; chemical or biological transformation). The possibilities associated with the latter approaches that do not include direct heat utilization are unlikely to be utilized in our country. However, research activity should follow world trends in view of future opportunities for export of collectors, etc.

After the year 2000 thermal utilization of solar energy is expected to grow to 2 or 3 times the level predicted for the year 2000.

4. Conclusion

The role of new energy sources in our country in the long term can only be estimated approximately. Answers involving factors necessary for evaluation must be approximate because the needed detailed information on the utilization of new energy sources under consideration has not yet been formulated. In the interest of better evaluation it is necessary, even under these conditions, to compare the unit capital cost of energy conservation measures to the unit cost of eocene mines. The operating costs of eocene mines will certainly be greater than the operating costs of the utilization of new energy sources. As a result, the ratio of costs for producing a unit of energy are more favorable than the present ratio we formulated in terms of relative capital costs which, by the way, are expected to improve with the introduction of mass production methods.

We can conclude that under the conditions of our country, among the three new energy sources under discussion, geothermal energy is the most advantageous from every point of view. After that, the utilization of biogas may be regarded as a potential energy source. Solar energy takes third place.

The combined percentage of utilization of all three energy sources in the year 2000 cannot be put above a few percent of the total energy requirements of the country. Thus, it would be a mistake if nuclear energy and coal utilization programs were in the least affected by long-range expectations regarding their use. It is an undeniable fact, however, (and this is why we are considering these energy sources) that their utilization [illegible]liorate our energy problems as a whole.

We should not lose sight of the emerging international cooperation within CEMA over a range of subjects wider than the ones discussed here. In view of these facts, the necessary research and development activity must be organized, with maximum attention paid to the principle of specialization. Other useful solutions for implementing international cooperation must also be explored.

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HUNGARY

FOOD INDUSTRY MAKES PROGRESS IN ENERGY CONSERVATION

Budapest ELELMEZESI IPAR in Hungarian No 7, 80 pp 243-248

[Article by Laszlo Szobel of the MEM [Ministry of Agriculture and Food Industry]: "Energy Saving Measures"]

[Text] Summary

The author analyzes the situation of energy management, based on a study of this topic conducted at the ten economic operating units which are under MEM's supervision.

He also deals with the role the energy management organizations have at the trusts and enterprises.

He examines the way energy use has developed, and within this deals with the management of electrical energy, steam energy, and fuel management.

He covers the introduction and numerical evaluation of the 1979 energy saving plans.

Effect of the Energy Saving Measures in the Energy Management of the Consuming Trust and Enterprise

In the national economy's total output energy costs at the present time run around 10 percent. In coming years this ratio is expected to increase due to the large rise in the price of energy sources.

The specific investment costs for energetics establishments have increased. In the last plan period the proportion of energetics investments to industrial investments was 30 percent, but in the current plan period this proportion is [illegible]0 percent and in the next plan period it will approach 45 percent.

It follows from the above data also that rational economic operation is emphasized in the area of energy usage, and its significance in the national economy will grow more and more. Everywhere in the world, energy management is being regulated by statutes, regulations and plans. And these urge frugal economic operation on the economic operating units. In its 1978 resolution the Council of Ministers obligated 50 significant energy user enterprises to prepare energy saving plans. The following large energy user trusts and enterprises under MEM's branch direction were required to prepare energy saving plans:

Livestock Sales and Meat Industry Trust
Trust of the Poultry Processing Enterprises
Trust of the Sugar Industry Enterprises
Grain Trust
Trust of the Canning Industry Enterprises
Trust of the Beer Industry Enterprises
Trust of the Dairy Industry Enterprises
Trust of the Alcohol Industry Enterprises
Vegetable Oil Industrial and Laundry Detergent Manufacturing Enterprise, and the Mohacs Wood Fiber Panel Factory.

It can be seen from the list that the trusts and enterprises include a significant portion of the food industry.

The conclusions made from the study of their energy management can be generalized for the entire food industry.

We took the following viewpoints into consideration in studying the situation of their energy management:

--structure and effectiveness of the energy management organization,
--the way energy consumption developed in the years 1976 through 1978,
--electrical and steam energy and fuel consumption,
--effect of the energy saving measures and fulfillment of the energy saving plans.

The Energy Management Organization

Creation and the operating conditions of the energy management organization, the energy management activity of the economic operating and supervisory organs are regulated by order No 8/1974. (XI. 20) NIM [Ministry of Heavy Industry] of the minister of heavy industry. Paragraph No 1 of the order decrees that the energy management organ be created,--based on the cost of energy sources accounted at purchase costs.

At each of the trusts and enterprises in the study, energy costs exceed the 20 million forints figure established in the order as the upper limit, at which a chief energeticist or an organizational unit under the direction of a chief energeticist must be instituted.

The energy management organizations were established at the economic operating units during the time period covered by the study. Due to the limits which exist on manpower management at the trusts, and also to the rigidity of the organization, in the poultry, grain and alcohol industries the tasks of chief energetician are being carried out by people in related job assignments, which is contrary to the regulation.

Due to the importance of executing the tasks related to increasing energy savings, the MEM's Main Technical Department in its memorandum published on 10 August 1979 (No MEM. E. 14) again calls the attention of enterprises, cooperatives, institutions and establishments under the ministry's sectional direction to observe order No 8/1974 (XI. 20) NIM.

The energetics organizations or the energeticians in charge must be given more help and authority than they now have, to handle the increased tasks. The energy organization should everywhere be placed under the authority of the technical director or chief engineer, so that with his help it would be able to implement the economical and thrifty energy consumption measures on time and efficiently in all areas.

During the time of the study, 236 employees worked on energy-related tasks at the trust enterprises and factory units. Of the 236 people, 63 are under the direct supervision of a technical director or chief engineer (table 1).

Table 1.

Energy Organization of the Trust Enterprises and Factory Units, and the Units Obligated to Prepare Independent Energy Balances

Industries	Main Department Head, Department Head, Plant Manager, Group Leader	Chief Energetician	Energetician	Total	Number of units obligated to prepare independent balances
Meat industry	8	7	22	37	40
Poultry industry	3	2	7	12	11
Sugar industry	12	2	15	29	12
Grain industry	--	7	29	36	51
Canning industry	7	2	28	37	32
Beer industry	--	5	6	11	21
Dairy Industry	1	4	41	46	58
Alcohol industry	--	5	15	20	30
Vegetable oil industry	--	5	2	7	5
Wood fiber panel	--	1	--	1	1
Total:	31	40	165	236	261

Table 2.

Development of Total Expenditures and Energy Costs

Year	Total expenditures	Energy Costs
1976	100.0	100.0
1977	109.0	106.3
1978	112.3	115.8

An independent energetician cannot be given other assignments except for handling the water management and environmental protection tasks. The enterprises usually do not observe this directive, 38 people were also assigned other tasks in addition to those in the regulation.

The academic training of those working in the energy organizations complies with the regulation's requirements, 41.5 percent of them have college-level training.

Development of Energy Consumption in the Years 1976 through 1978

In 1976 through 1978 the cost of energy for the economic operating units was 2.5 to 2.6 percent of the total costs. There are significant differences in percentage distribution because of the differences in the value of raw materials processed by the various industries. Because of this, in terms of percentages the cost of energy is lowest in the meat and poultry industries, 1.1 to 1.5 percent. The sugar and beer industries occupy positions in the middle of the field with their 6.2 to 7.4 percentages, while the ratio is highest in the alcohol industry and in the wood fiber panel factory, 15.8 to 18.3 percent.

The low proportion of energy costs can be traced back to the fact that the additional energy expenditures used for eliminating production losses resulting from the lack of organization of production and from violating the technological discipline, are not being taken into consideration in some industrial branches.

During the three years covered by the study, energy costs increased by 15.8 percent; the increase in energy consumption measured in terms of equivalent joule value was 9 percent. For the most part the difference in the larger percentage growth can be explained by the price changes for energy sources which have occurred in the meanwhile. Table 2 shows the total and percentage changes in energy costs.

The structural composition of energy sources changed significantly in the 3 years of the study. The use of solid energy sources declined by about 10 percent, and this is unfavorable from the national economy's viewpoint. It can be considered favorable that within the consumption of hydrocarbons the consumption of natural gas increased more than that of oil in general.

Electrical energy consumption increased 14.5 percent, which is not favorable from the national economy's viewpoint, considering the limited capacity of the power plants.

The ratio of purchased steam did not change significantly; this at the same time also reflects the low level of energy cooperation among enterprises. Table 3 shows the development of energy consumption, while Table 4 shows the yearly changes in the percentage distribution of energy sources within this.

Energy standards are in essence regulations governing the energy use by the economic operating units. Their purpose is related to the planning of energy consumption. The energy standards must include production's total energy requirement, the characteristics of production technology and the degree of the technological equipment's efficiency. The energy standards can be determined by various methods.

Table 3.

The Development of Energy Consumption

Units: GJ

Year	Solid	Liquid	Gaseous	Electrical energy	Purchased steam	Total
1976	6,949.2	16,674.3	5,708.5	2,407.9	3,519.6	35,259.5
1977	5,775.3	17,427.1	6.998.5	2,601.8	3,651.5	36,454.2
1978	6,277.1	17,414.9	8,276.9	2,869.3	3,708.8	38,547.0
1978/76 percent	90.3	104.4	144.9	114.5	105.4	109.0

Table 4.

Structural Changes in the Consumption of Energy Sources

Year	Solid	Liquid	Gaseous	Electrical energy	Purchased steam
1976	19.7	47.3	16.2	6.8	10.0
1977	17.6	46.8	18.8	7.0	9.8
1978	16.3	45.3	21.5	7.1	9.6

Two kinds of practice can be observed in industry: technical estimating based on statistical calculations, and equivalent value calculation developed for the main product. In the meat, poultry, canning, dairy and vegetable oil industries, due to the broad spectrum of products, energy standards cannot be established based on measurements with the present level of instrumentation.

The Budapest Meat Industry Enterprise's efforts to fully implement the measuring of energy consumption, is worthy of attention. After two years of preparation the technological line is being equipped with a high level of instrumentation. With the experience thus obtained, they may create a good foundation to develop in-plant measurements for technologies with high energy requirements.

At economic operating units with homogeneous product structures--grain, sugar, alcohol and beer industries and the wood fiber panel factory--specific energy consumption can be evaluated on the basis of factual data. In these industries, instrumentation and the points of measurement have been developed to a significant extent.

At the present time the high cost of obtaining the instruments, and lack of solution for their maintenance and spare parts supply, are also placing limits on spreading the measurement of energy consumption. Considering the unfavorable price changes for energy sources, which we must expect also for the long range, in the interest of having more effective control on energy management, instrumentation and the foundations for automation are indispensibly necessary in order to accomplish optimum energy utilization. Identifying our energy use losses in the plants is also in close harmony with the measurement opportunities.

Experience gained in the investigation has shown that in general the measures taken to eliminate the identified energy losses take effect faster if they can be eliminated by organizational or maintenance activity. Those measures which require investments are implemented as a function of the given enterprise's financial condition, but always with low priorities.

Electrical Energy Management

Of the economic operating units studied, the sugar, beer and alcohol industries produce a portion of the electrical energy they need for their own use. The other enterprises obtain all their needs from the national electrical network. In the energy consumption of the enterprises--not counting the energy they produce--the share of electrical energy is about 7 percent. Taking the electrical energy into consideration also which they produce for their own use, this ratio is 8.5 percent.

Between 1976 and 1978, electrical energy consumption increased by 13 percent. During this time, production value increased by 9.6 percent. The meat industry's electrical energy consumption increased significantly, by 27 percent--in connection with the reconstructions and new investments. Table 5 shows the electrical energy consumption of the economic operating units.

The enterprises use electrical energy mainly for operating the technological equipment. The tight manpower availability also increases consumption's growth. The enterprises substitute for live work by using more electrical machinery. In the last 10 years the grain industry's electrical energy needs have increased significantly, since the transmission-driven mechanical mills are being replaced by individually driven mills equipped also with pneumatic material-handling systems which are more favorable from the work safety viewpoint.

Table 5.

Development of the Use of Electrical Energy
1976 = 100 percent

Industries	1977	1978
Meat industry	117	127
Poultry industry	108	110
Sugar industry	105	114
Grain industry	106	106
Canning industry	111	112
Beer industry	108	107
Dairy industry	113	120
Alcohol industry	104	102
Vegetable oil industry	114	116
Wood fiber panel	92	109
Total	108	113

The level of electrical energy management can be evaluated through the demand for output (daytime, peak time), the use derived from the demanded output, and by how much this demand is exceeded; also, on the basis of the value of price bonus paid for the performance factor, and the return this brings.

Regulation No 4/1977 (XII. 29) NIM-AH [Ministry of Heavy Industry--Price Authority] regulates the way electrical energy prices are set for the various types of consumption. The regulation which is now in effect, urges the economic operating units which enter into contracts, to make good use of the generated power they demand, and not to exceed their demands. In the interest of moderating the amount of electrical energy drawn from the lines in peak periods, the contracted performance fee is about double that of the daytime rate. For each case of excessive consumption above the contracted performance, a penalty equal to the yearly fee for excessive consumption must be paid. This provides the incentive for the enterprises to contract for power they will not exceed even in the case of maximum use. The fee paid for committing themselves to a certain amount of power provides the incentive for the enterprises not to overinsure for themselves.

The economic operating units endeavor to moderate the extent of peak-time commitments and one-time energy draw in the way they organize their work. The grain industry is a good example of this, where peak-time energy use is decreased by scheduling the shut-down shift of two-shift production operations for this time period. Table 6 shows how the committed power is being used.

Utilization of the committed power can be considered good in the grain industry and in the Mohacs Wood Fiber Panel Factory.

The low utilization percentage in the sugar industry is explained by the fact that the industry itself produces a significant portion of the electrical energy it uses. The enterprises contract for the decisive majority of committed power as auxiliary energy for the time of the campaign, to replace possible losses of production of their own power plants. Better utilization and decreased costs can be achieved at the other economic operating units by more accurate planning of the power commitments.

Table 6

Utilization of the Committed Electric Power

Units: %

Industries	1976		1977		1978	
	day-time	peak-time	day-time	peak-time	day-time	peak-time
Meat industry	--	--	81.0	82.0	83.0	85.0
Poultry industry	81.9	91.5	81.5	87.6	83.9	85.9
Sugar industry	74.4	79.7	65.4	75.8	76.3	81.9
Grain industry	97.8	100.0	98.2	98.5	95.6	96.6
Canning industry	92.3	92.1	87.5	93.9	91.8	91.3
Beer industry	87.0	90.0	87.0	90.0	86.0	90.0
Dairy industry	90.3	88.8	88.5	90.9	91.9	92.9
Alcohol industry	92.8	93.3	93.2	91.9	91.6	92.1
Vegetable oil industry	89.8	86.2	90.6	88.3	89.0	85.2
Wood fiber panel	98.4	98.4	99.7	97.1	99.8	98.5

In electrical energy management, unused generated power appears as a necessary loss. Therefore the power supplier encourages improvement of the power factor's value. It pays a rebate or charges a surcharge depending on the power factor's measured value. Reactive energy management can be improved in the plants in part by proper plant operation and plant organizing methods (for example, by replacing oversized motors, decreasing idling runs to a minimum, etc.).

The other way to improve operation is to use phase-improving condensers.

During the study's time period the plants were equipped with adequate phase-improving systems. A problem exists in the fact that the repair time for condensers which develop problems is very long, and a way has not been found to temporarily replace them during the time of repairs, because of the regulations currently in effect.

Reactive energy management can be considered good overall, since rebates increasingly exceed surcharges. Table 7 shows the development of surcharges and rebates. The overall effect of factors influencing the electrical energy management is summarized in the specific electric rates. In Table 8 we have summarized the development of specific electric rates of the economic operating units covered by the study.

Table 7

Development of Surcharges and Rebates

Units: 1,000 Forints

Industries	1976		1977		1978	
	surcharge	rebate	surcharge	rebate	surcharge	rebate
Meat industry	2,995	1,536	2,301	1,350	1,576	2,842
Poultry industry	568	894	257	1,018	290	1,314
Sugar industry	1,363	264	1,055	380	542	588
Grain industry	2,935	2,231	3,172	2,480	3,385	3,347
Canning industry	478	1,662	788	1,823	948	2,396
Beer industry	19	1,459	147	1,392	49	1,744
Dairy industry	1,444	1,187	1,103	1,517	1,058	785
Alcohol industry	383	622	309	529	388	865
Vegetable oil industry	--	1,500	--	1,500	--	1,500
Wood fiber panel	--	1,449	--	1,330	--	1,737
Total	9,885	12,804	9,132	13,319	8,236	17,118

Table 8

Development of Specific Electric Rates

Unit: Forints/kWh

Industries	1976	1977	1978
Meat industry	--	0.88	1.02
Poultry industry	0.70	0.68	0.86
Sugar industry	1.12	0.96	1.00
Grain industry	0.90	0.90	1.07
Canning industry	0.82	0.85	0.99
Beer industry	0.64	0.63	0.73
Dairy industry	0.92	0.86	0.99
Alcohol industry	0.82	0.90	0.96
Vegetable oil industry	0.82	0.77	0.93
Wood fiber panel	0.70	0,70	0.73

Steam Energy Management

The enterprises studied spend most of the energy they use to generate steam. The ratio of coal-fired boilers decreased significantly after the hydrocarbon program was implemented. Table 9 shows the distribution of boilers according to energy source.

Table 9

Distribution of Boilers According to Energy Source

Units: %

Industries	1978 Coal	1978 Oil	1978 Gas	1977 Coal	1977 Oil	1977 Gas	1976 Coal	1976 Oil	1976 Gas
Meat industry	20.7	33.6	45.7	17.1	33.1	49.8	11.2	30.6	58.2
Poultry industry	58.4	9.9	31.7	58.4	11.2	30.4	55.7	12.7	31.6
Sugar Industry	13.5	78.5	8.0	11.8	80.2	8.0	11.7	75.5	12.8
Grain industry	--	100.0	--	--	100.0	--	--	100.0	--
Canning industry	37.4	6.1	56.5	30.8	7.4	61.8	32.9	9.7	57.4
Beer industry	19.6	64.5	15.9	18.6	67.8	13.6	19.4	65.4	15.2
Dairy industry	10.2	62.1	27.7	8.5	55.8	35.7	6.8	52.5	40.7
Alcohol industry	41.4	23.0	35.6	39.0	24.2	36.8	30.5	27.9	41.6
Vegetable oil industry	35.0	32.2	32.8	25.0	23.0	52.0	24.7	21.3	54.0
Wood fiber panel	73.7	26.3	--	75.8	24.2	--	76.7	23.3	--

Industry's average of boiler efficiency shows a trend of improvement. This can be connected with the fact that in the last 10 years the industries carried out significant boiler reconstruction which was accompanied by a shift in energy sources. Table 10 shows the development of boiler efficiencies.

Table 10

Development of Average Boiler Efficiency

Units: %

Industries	1976	1977	1978
Meat industry	75.6	76.0	76.2
Poultry industry	76.0	74.4	75.6
Sugar industry	81.9	82.2	82.2
Grain industry	80.0	80.0	80.0
Canning industry	72.0	76.2	75.0
Beer industry	74.7	74.6	77.9
Dairy industry	74.8	74.5	75.5
Alcohol industry	72.7	73.8	75.6
Vegetable oil industry	68.5	68.0	69.0
Wood fiber panel	67.8	72.8	72.8

During the course of examining the boiler operations we concluded that the current state of instrumentation does not fulfill the conditions of economical operation. There are no stack gas analyzers; and carbon dioxide, oxygen carbon monoxide + hydrogen measuring instruments, with the selective installation of which the savings which can be achieved in the boilers could be increased. Supplying the existing instrument inventory with spare parts, and their centralized maintenance also have not yet been solved.

It should be made a goal in the future to improve the level of automation of the boiler plant operations, by which--based on the above mentioned instruments--significant energy savings could be effected in the industry.

Industry's experience with the introduction of chemical scrubbing of stack gases is favorable. More attention must be paid to water pretreatment. The poor condition our condensed water networks are in can be connected with this, since poorly treated boiler feed water has a corrosive effect which significantly decreases the network's lifespan. Therefore regular on-site testing of the water quality is very important.

Fuel Management

At the economic operating units studied, the transportation activity operates in the form of independent enterprises in the dairy and canning industries. Transport enterprises have not been set up at the other trusts transportation is handled in decentralized group organizations, or through motor vehicle managers. Fuel management is of outstanding importance at the two transportation enterprises, since 80 to 85 percent of the fuel costs are spent for motor vehicle fuels. Since transportation is their primary profile, the costs relating to operation and maintenance of motor vehicles fundamentally influence the enterprise's results.

An enterprise's fuel standards system has been developed at the TSZSZKV [transportation enterprise for dairy cooperatives], with attention given to the characteristics of transportation in the dairy industry. The standards system was put into effect on 1 September 1976, and it authorizes lower standards than the norms specified by the KPM [Ministry of Transportation and Postal Affairs] which is in effect. The enterprise's standards system covers 70 percent of the mileage driven. In the last 3 years the enterprise saved a significant amount of fuel. No standards systems of their own have been devised at the KOHUSZ [transportation enterprise for the canning industry] nor at the other enterprises; these conform to the KPM standards.

The motor vehicles are maintained by the two transportation enterprises at their own service centers. The repair shops are equipped with modern diagnostic equipment. Phased-out motor vehicles are being replaced, keeping in mind the advantages of standardization.

At the other economic operating units, the level of technical maintenance of their vehicles is less favorable than at the transportation enterprises --due to the adverse circumstances and poorer equipment. The same can also be said about the motor vehicle park's inventory. Repair costs are developing unfavorably, there are many motor vehicles being kept on the books at their theoretical values. Replacements for the motor vehicle parks are being acquired without a plan--as a function of the financial position of the enterprises--and not built on standardization.

During the time period under study, the extent of providing financial incentives in the interest of making energy savings more efficient, was small. In the annual plans they determine the amount of energy needed to implement production, or in some places the specific energy rates. Management gave little consideration to the fulfillment of these when the overall annual bonuses were given out. The financial interests of people working directly in production have been partially resolved only for those who work in the transportation activities, and in bonuses for motor vehicle drivers.

Fulfillment of the 1979 Energy Savings Plans

Of the 103 energy savings plans of the trusts and enterprises examined, 92 were prepared in numeralized forms, that is, forms which can be evaluated. When the plans were set up, total energy savings were shown in terms of millions of kilocalories and thousands of forints. Of the total energy savings, electrical energy plans were also set up in natural units of measurement (MWh).

The economic operating units examined planned to save 11,623.8 MWh of electrical energy, which was fulfilled by 17,197.1 MWh, or 148 percent.

The plan's significant overfulfillment resulted in part from the fact that even though the sugar industry planned no savings, it was able to show a savings of 1,145 MWh. Five of the ten units did not fulfill their pledged obligations, while four significantly overfulfilled them. The beer industry's failure to fulfill its plan can be traced back to the decline in the amount of its own production of electricity, while in the other industrial branches, for example in the poultry industry, it was not taken into consideration that investments which begin operation during the year, and the process of bringing new plants up to full operating speed, will affect their abilities to fulfill the plans.

Total planned energy savings were 197,843.8 million kilocalories (828,371.8 GJ), which was fulfilled by 339,115.5 kilocalories (1,419,876.6 GJ). The industries overfulfilled the plan to 171 percent.

The enterprises planned 58,014,000 Ft savings in energy costs. Based on actual 1979 data, the result was 97,662,200 Ft, which means 168 percent fulfillment of the plan.

Percentage fulfillment of the energy savings plans of the trusts and enterprises is shown in Table 11.

Table 11

Percentage Fulfillment of the 1979 Energy Savings Plans

Units: %

Industries	MWh	10^6 kcal	1,000 Ft
Meat industry	213	333	434
Poultry industry	--	401	369
Sugar industry	--	251	193
Grain industry	433	122	182
Canning industry	98	107	125
Beer industry	56	187	123
Dairy industry	83	140	119
Alcohol industry	19	308	214
Vegetable oil industry	117	51	82
Wood fiber panel	245	233	271
Total:	148	171	168

When the plans are judged, the energeticist organizations of the trusts must pay more attention to realistically uncovering the reserves which exist in energy management, and to working these out in terms of numbers.

At the same time it can be concluded that the contingency plans for energy sources for the second half of 1979 provided incentives to the enterprises to improve their energy management.

It also can be concluded that the energy savings plans had a mobilizing effect on making energy management more effective. The results achieved look good, even though in overall terms the savings amounted to only about 2 to 3 percent of the energy consumption of the trusts and enterprises.

In order to achieve more significant savings it is important for the trusts and enterprises to prepare short and longer-range energy rationalization plans and to consistently implement these plans.

In order to create better energy management conditions, this will require a serious change in attitude on the part of those who direct the economic operating units.

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MEM Main Department for Enterprise Control

8584
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URGENT PROBLEM OF MERCHANT FLEET MODERNIZATION DISCUSSED

Gdansk GLOS WYBRZEZA in Polish 11 Aug 80 p 3

[Text] One of the first meetings of the Commission for Maritime Economy and Shipping in the new session of the Sejm was devoted to the discussion of a very important problem: modernization of the Polish merchant fleet.

The Ministry of Foreign Trade and Maritime Economy presented the deputies with matierals which show that the last decade has brought a significant increase in new tonnage of the Polish Merchant Marine. This increase is accounted for mainly by the bulk transport. The period 1971-1975 was a time of particularly intensive construction of vessels to transport liquid cargo (crude oil and its derivatives, liquid sulfur) and dry bulk (grain, feed, coal, and metal ore). Less dynamic was the tonnage increase to transport general cargo and to service regular shipping lines. As a result there was a 10 percent decrease in transport by the Polish liner fleet--from 5.1 million tons in 1975 to 4.6 million tons in 1979. The general bulk cargoes of the Polish foreign trade carried by this fleet decreased even more, that is about 20 percent. An additional reason for the small increase in the liner fleet was its significant aging. Consequently there was a loss of cargoes, especially of the more profitable ones, to foreign shipowners with modern vessels.

The average age of our general cargo ships is 14 years. In our liner fleet, the share of vessels less than 10 years old is only about 50 percent, while in the Swedish and Norwegian fleets, it is 83.2 percent; in the Japanese, 82 percent; in the West German, 79 percent; and in the French, Belgian, and Spanish above 77 percent.

The aging of the liner fleet has caused an increase in operating difficulties, for example because of the refusal in many ports of the world to service vessels which are over 15 years old. At present, the old vessels in our liner fleet constitute about 85 percent. The tonnage participation of cargo transportation by modern techniques, for example in containers, in our fleet is more than 50 percent less than the world average.

To continue maintaining the presence of the Polish liner service in a number of shipping conferences, it was necessary to build or buy special roll-on/roll-off, container roll-on or multipurpose vessels. Because of a steadily decreasing supply of new tonnage from our shipyards, connected with the export goals of the Ministry of Heavy and Agricultural Machine Industry, it was necessary to employ other, economically justified, solutions. In 1974 a new system of buying vessels through a mortgage lien was worked out. Through this system 12 vessels of about 350,000 deadweight tons were bought between 1976-1980. Then, a Polish-British and a Polish-French company were formed to build vessels. As a result, our liner service will get a total of 26 vessels with a tonnage of about 250,000. The construction cost will be paid back with partial receipts from the operation of the vessels. In the opinion of the ministry, as far as the tonnage structure is concerned, the supplies from Polish shipyards should be mainly special ships of advanced design and technology. The ships of simple construction on the other hand, mainly bulk cargo ships, which because of limited production possibilities could not be built in Poland, should be ordered abroad (the cost to build 1,000 deadweight tons of the ro/ro ship of 20,000 deadweight tons is approximately 80 million zlotys, and to build a bulk cargo ship of similar tonnage, about 20 million zlotys). The advisability of further increase of the Polish maritime fleet stems from its high economic effectiveness and its role played in Polish foreign trade. The share in the balance of payments for shipping fees paid to foreign shipowners for general cargo is about $100 for each ton carried.

The liner fleet could properly serve the Polish foreign trade and export transport services if by 1985 the Polish Ocean Lines increases its tonnage by 550,000 deadweight tons and the Polish Baltic Shipping Company by 16,000 deadweight tons. To avoid aging of the tramp fleet, it is necessary to buy ships with tonnage of about 750,000 deadweight tons. It is necessary to obtain in the next 5 years ships with a total tonnage of about 1.3 million deadweight tons; that would put at our disposal, after scrapping, a tonnage of 5.2 million deadweight tons (in 1971-76 the increase in new tonnage was 2.4 million deadweight tons and in 1976-80 about 620,000 deadweight tons). A program of increasing the merchant fleet in 1981-85 by 1.3 million deadweight tons has been approved. Now we have to determine the sources where we can purchase ships and establish a balance between supplies from Polish and foreign shipyards. So far, eight ships with a total tonnage of about 176,000 deadweight tons have been contracted to be supplied by foreign shipyards, and in the near future an agreement is expected for the construction of five general cargo ships, each 38,000 deadweight tons, with an option for an additional five ships. If one negotiations are successfully concluded, five other, ro/ro ships, with a total tonnage of about 35,000 deadweight tons will be built. It is still an open matter in this situation to determine sources of supplies of about 900,000 deadweight tons. Failure to carry out this program would mean a loss of shipping fees, calculated according to the conditions of 1979, totaling $190-240 million. The losses in returns for the export of transport services would be twice as much.

Orders for the type and number of ships that may be built in our shipyards have been given to the Ministry of Heavy and Agricultural Machine Industry. Despite many meetings and discussions with representatives of the ministry, the ministry has not been able to determine till now the range of ship supplies for the Polish fleet in the years 1981-85. The ministry gives a general estimate that it will be close to the level of supplies from 1976 to 1980, that is, about 276,000 deadweight tons. The reserves in the export portfolio of the shipping industry orders to the end of 1985 are about 2 billion foreign-exchange zlotys. In the opinion of the Ministry of Heavy and Agricultural Machines, about 30 percent of these reserves (tonnage of a value of about 700 million foreign-exchange zlotys) could be used for our liner service. In the opinion of the ministry, the above-mentioned tonnage of merchant ships should be considered in the plan for Polish supplies for 1981-85, with a possibility of increasing by additional vessels if there are no cash export contracts.

The Liner Services' Opinion

A representative of the Polish Steamship Company, Director Ryszard Karger, comments: "Calculating the practical needs of Polish foreign trade, one should conclude that in 1985 the Polish Steamship Company should have ships with a total tonnage of [illegible].2 million tons. It means therefore that it is necessary to increase the tonnage in the coming 5 years by about one million tons. Failing to reach these targets will put the Polish Steamship Company in a bad situation, comparable to the situation of the Polish Ocean Lines this year."

A representative of the Polish Ocean Lines, director Kazimierz Misiejuk, gives the following view: "The present situation of the Polish Ocean Lines is to a high degree caused by failure to fulfill the last two five-year plans in supplying new vessels. In the Polish Ocean Lines we are clearly short of adequate tonnage. There are delays in technological progress and physical wear and tear: 33 ships have been used for more than 10 years. As a result, our repair costs increase, and they are more labor-intensive and time-consuming.

"The Polish Ocean Lines do not know the size of new supplies in the coming 5-year period of 1981-85. Simultaneously, because of the results of significant physical wear and tear on scores of vessels, the possibility of retiring them must be considered. If then the new supplies in the period of the coming five-year plan will not allow the maintenance of the transportation potential the company has had up to now, we will find it necessary to eliminate some lines, and that would have a very negative impact on Poland's balance of payments."

The Ministries' Opinions

A representative of the Ministry of Heavy and Agricultural Industry, Director Andrzej Adamczyk, comments: "We have worked our plans for the development of the Polish shipping industry for 1981-85. It is planned, among other things, to increase production by 30 percent in comparison with the last 5-year period. We expect a dynamic development of exports. The ship supplies for our liner services will be maintained at the level of the last 5-year period.

"The possibility of maneuvering in the coming 5-year period is limited. The quantity of ship supplies to the Soviet Union has been settled in a binding way, as well as to a great degree the quantity of exports to the second payments area countries. The value of production not yet contracted for does not exceed 2 billion foreign-exchange zlotys, and only in this area will it be possible to make a decision about supplies for the Polish liner services. Initially, we plan to export to the second payment area the value of 5.8 billion foreign exchange zlotys. If one third of the planned export could be earmarked for the Polish liner services, the supplies would reach a value of 10 billion zlotys. In the last 5-year period, the total value of supplies for the Polish liner services was 18 billion zlotys (for both merchant and fishing ships)."

A representative of the Ministry of Finances, Director Jozef Pieta, states the following opinion: "According to National Bank of Poland data, in the last 3 years shipping fees have been as follows: in 1977, in the second payment area they were 508 million foreign-exchange zlotys; in 1978, 461 million foreign-exchange zlotys; and in 1979 a sudden increase to 730 million foreign exchange zlotys. It is difficult to evaluate what the reasons were. In the period under discussion the volume of the Polish foreign trade exchange, both in import and in export, has not changed significantly.'

The Deputies' Opinions

Deputy Tadeusz Fiszbach gives the following comment: "We have to search for new possibilities of developing the Polish Merchant Fleet.

"The Ministry of Foreign Trade and Maritime Economy and the Ministry of Heavy and Agricultural Machine Industry in cooperation with the Planning Commission of the Council of Ministers should work out a program of new ship supplies for the Polish liner services from local sources. To achieve this goal all possibilities should be used. They are not at present great, but we can reach a position where they will increase. First of all we should modernize and develop the Polish shipping industry, and it is known that not many modernization measures have been taken. Having achieved modernization, we could achieve a significant increase in production. We should aim to build ships in longer series; with a decrease in the number of prototypes constructed, we will increase shipyard labor productivity. Another important element is to increase employment in the shipyards. For example, increasing employment in the Komuna Paryska Shipyard by 1,000 workers (present employment 10,000) would increase productivity by 40 percent. These are tremendous reserves. Additional possibilities can be found in stabilizing personnel. The present turnover in shipyards has reached 45 percent, and is most frequent among young workers. It could be sharply reduced by bigger allotments of apartments to shipyard workers.'

Deputy Tadeusz Lodykowski comments: "The problems concerning modernization of the Polish merchant fleet occupy a crucial position in the deliberations on the future of Polish shipping. They are at the same time problems of considerable social importance. They attract the interest of the whole society, which expects unambiguous answers to existing questions. The importance of these problems found its expression during the precongress discussions as well as in the resolutions of the Eighth PZPR Congress, where the necessity to modernize the Polish merchant fleet was pointed out clearly.

"It is foremost in deliberations on the development perspectives for the Polish merchant fleet to determine the range of needs in the area. As can be easily shown, these needs are determined at present mainly by criteria of quantity: the size of cargoes that must be carried for the needs of foreign trade. Evaluating the long-range development directions of the maritime transport service, one should emphasize, however, criteria of value: first of all to determine the impact on Poland's balance of payments. Meanwhile, during work on the five-year plan, criteria of quantity are taken mainly, if not exclusively, into account. This is quite an essential error in the method of planning. It can be observed clearly in the materials prepared by the ministry for today's session. They are limited to a brief and rather general statement that the further development of the Polish merchant fleet will have essential impact on the balance of payments in Poland. What should be clearly determined is what specifically this impact will be. Two options should be considered: that is by establishing on the one hand what will be the result of meeting the needs of the fleet, and on the other hand determining what the results will be if these needs are not satisfied (that would be a peculiar program of renunciation)."

Deputy Jerzy Zygmanowski comments as follows: "there are various possibilities for increasing the number of vessels in the Polish merchant marine. An interesting proposal concerning this topic was presented during today's discussion by Deputy Fiszbach. We have to take both sides into account. We have to know clearly what we will gain if the proposals to increase the new tonnage supplies for our liner services are carried out and, on the other hand, what the results will be if this increase does not take place. Our country was forced to use foreign fleets to carry cargoes of 7.8 million tons; compared to 1978 this is an increase of 4 million tons. And this specifically is the cause of the shipping fee increase that a representative of the Ministry of Finance could not explain to us. We have to realize that because of insufficant supplies of new ships for the Polish liner services the shipping fees to foreign owners will grow each year. This is a very important problem on the eve of a discussion on the shape of the five-year plan."

After analyzing the materials prepared by the Ministry of Foreign Trade and Maritime Economy, after listening to the representatives of other ministries and after the discussion, the Commission for Maritime Economy and Shipping decided to prepare an opinion on the modernization of the Polish merchant fleet.

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HARD CURRENCY, DINAR SAVINGS DISCUSSED

Belgrade BORBA in Serbo-Croatian 25 Sep 80 p 3

[Excerpt] Of the 162 banks in the country, about 90 have accepted the agreement on granting credits to citizens on the basis of selling foreign exchange, which went into force officially on 1 October of this year. According to this agreement, every citizen who sells foreign exchange receives four times more credits for building housing and developing his independent economic activity. In regard to foreign exchange savings deposits, which are the main source for selling foreign exchange, following the winter decline, these savings are again increasing. From 31 December 1979 to 20 August 1980 they increased from 146.7 billion to 211 billion dinars and surpassed dinar savings. Most of this increase (about 50.3 billion dinars) was the result of devaluation which automatically increased foreign exchange deposits expressed in dinars. But even when this sum is deducted, foreign exchange savings nevertheless increased by about 14 percent over last year. This is not much, but also not a small amount, when one recalls that it was falling at the beginning of the year. In contrast to this, dinar savings deposits are stagnating and in certain months such as March and May they even declined, but revived somewhat after the beginning of August. On 20 August they totaled 154.7 billion dinars compared to 152 billion dinars on 31 December 1979. Usually the reasons for stagnation in dinar savings is sought in inflation but there are also other reasons such as the decline in real personal incomes, the present psychosis on the market, etc. Dinars are being changed into foreign exchange more and more.

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YUGOSLAVIA

BRIEFS

AGRICULTURAL PRODUCTION--At the 25 September meeting of the FEC (Federal Executive Council) the draft program and measures for grain and industrial crop production in 1981 was examined. It is planned to produce 18 million tons of grain, including 6 million tons of wheat, or 18 percent more than in 1979, 11 million tons of corn (11 percent more than in 1979), 7.8 million tons of sugar beets (26 percent more than in 1979) which would yield about 953,000 tons of sugar or 19.8 percent more than in 1979. This amount of sugar would not only satisfy the needs of the domestic market but would make it possible to export certain quantities. In addition, 594,000 tons of sunflowers would be produced, or 18 percent more than in 1979, from which about 250,000 tons of oil could be produced; this, added to vegetable oil produced from other crops, would bring a total of 325,000 tons or enough to meet the needs of the domestic market and enable the export of certain amounts. In order to create conditions as favorable as possible for increasing production, the FEC has established new producer-sale and protective prices for basic agricultural products from the 1981 harvest, to go into effect by 1 October 1980. [Excerpt] [Belgrade BORBA in Serbo-Croatian 27 Sep 80 p 4]

FERTILIZER SHORTAGE IN KOSOVO--That which caused a late harvest in Kosovo (lack of spare parts for combines) is now happening during fall planting, only this time it is a lack of artificial fertilizers. When the winter crop plan was recently adopted in Kosovo, it was openly said that an arrogant attitude would no longer be tolerated by anyone or any organization in cases where planned planting tasks are not carried out; because Kosovo can produce enough grain not only for its own needs but also for export. Unfortunately, this has not been the case this year. As a result of the fact that more than 20,000 hectares of arable land were not planted, Kosovo will have to import about 8,000 railroad carloads of bread grain for which scarce foreign exchange must be paid. About 75,000 tons of mineral fertilizers are needed for planting in Kosovo; the "Agrokosovo" has only about 15,000 tons in reserve, while there is a very little in addition on private farms. But an additional 60,000 tons are needed to plant the over 105,000 hectares of winter crops; of this amount only "Agrokosovo" has about 20,000 tons. Some agricultural organizations and private farmers cooperating with cooperatives, fearing for the quality of planting, rushed to purchase fertilizer from outside, which is more expensive and involves added transportation costs. [Excerpt] [Belgrade BORBA in Serbo-Croatian 2 Oct 80 p 5]

ALUMINUM PRODUCTION--Although bauxite production is growing, bauxite exports are gradually declining because of the increased needs of new alumina factories. In the 1981-85 period bauxite will mainly be processed domestically, but exports of alumina, aluminum, and the processing of this metal and its alloys will increase. It is estimated that by 1985, 50 to 60 percent of alumina production will be exported annually, or about 800,000 tons. This is twice as much as is exported now. Greater reduction in alumina exports can be expected after 1990 when the obligatory exports to the USSR cease and new aluminum electrolysis facilities are built in our country. Aluminum exports in 1985 are expected to rise to over 120,000 tons, or 2.5 times more than now. Aluminum will be exported on the basis of long-term business arrangements with the GDR, France, Bulgaria and Czechoslovakia. Also, certain quantities of aluminum will have to be imported to utilize processing capacities. Not until after 1990 will conditions be created to free us from aluminum imports. More aluminum manufactured goods are expected to be sold abroad. We now export 50,000 to 55,000 tons of aluminum and aluminum alloy products which is 40 percent of total production. [Excerpt] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 30 Sep 80 p 12]

COAL IMPORTS--The FEC has approved the import of 200,000 tons of briquettes and approval for an additional 500,000 tons is expected which nevertheless will not be enough to meet consumer needs. Mines would certainly have been able this year to produce at least 1 million tons more of coal if they had been given the foreign exchange to purchase spare parts and equipment on time. [Excerpt] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 3 Oct 80 p 1]

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